



1977

ANNUAL REPORT

OF THE

HEALTH AND MEDICAL SERVICES

OF THE

STATE OF QUEENSLAND

FOR THE

YEAR 1976-77

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1977

ANNUAL REPORT OF THE DIRECTOR-GENERAL OF HEALTH AND MEDICAL SERVICES 1976-77

The Honourable the Minister for Health

SIR,—I have the honour to submit for your information the Annual Report of the Health and Medical Services Branch of the Department of Health for the year ended 30th June, 1977.

P. R. PATRICK,
M.B., B.S. (Qld), D.P.H. (Syd.), F.A.C.M.A.
Director-General of Health and Medical Services.

INTRODUCTORY REMARKS

A number of reports of infectious disease which occurred during the year attracted a great deal of publicity. The interest these events created in the media has prompted an examination of the responsibility of the Health Department in giving information to the press on matters of public health. It is stressed that these remarks are confined to that field.

The events referred to are the cholera incident which occurred in the Beenleigh area, a number of cases of typhoid fever related to an infected food handler in Victoria and one unrelated case of the same disease in Brisbane, and the finding of salmonella organisms in various brands of baby food.

Infectious diseases today in countries like our own have almost negligible consequences for the public compared with the mortality and morbidity that they produced at the beginning of this century. Some of the factors responsible for this are a higher standard of health resulting from better living conditions and a public better educated in personal hygiene, far better treatment readily available, and health departments better equipped to deal with such situations.

Why, then, should these events produce such great public interest? It is suggested that such interest comes from the better educated public who quite properly demand a high standard of health care and wish to be informed why such events occur and what is being done to put things right. The public knows that cholera is a disease that occurs in other countries and unchecked may result in many deaths. It is known that typhoid fever killed many of our grandparents when they pioneered this State and that gastro-enteritis in infants is a dangerous disease. This knowledge must always create a concern when cases of such infectious diseases are reported and no doubt it is parents with young children who have the greatest concern.

In such circumstances health departments have a very serious responsibility in disseminating accurate information on what has occurred, and measures that the people themselves should take to prevent any further spread of the disease. In such cases a responsible press is an invaluable ally.

One aspect that sometimes troubles health authorities is the timing of making such information available. Early symptoms of the mildest of conditions can be very similar to those occurring in the most severe disease. Vomiting and diarrhoea may herald all varieties of conditions from an indiscreet intake of food to the deadliest of intestinal diseases. The diagnosis in many instances can be confirmed by bacteriological examination but such tests take time. The health

officer is faced with the problem of giving an early false alarm or waiting till the diagnosis is confirmed. He may be criticised in either case but events have shown that early rather than late announcement is preferable.

Once having made a decision, health authorities should take the initiative. Accurate information and simple but definite preventive measures that the public can take must be announced immediately. It is important to have one spokesman for all aspects of the subject. Here one must comment favourably on the current practice of departments employing press secretaries. The press secretary is an invaluable link between the department and the media.

Of course, reporting on such incidents is only one aspect of the activities that are going on when such incidents occur. Departmental officers are often feverishly active in investigating such cases and taking the necessary steps in preventing a spread of the disease. Here, due praise must be given to all those officers in the department who worked so tirelessly for very long hours over a long period when the one case of cholera occurred. Special tribute must be paid to the health inspectorial staff who left early in the morning and returned late at night after many hours in the field along the banks of the Albert River. High praise is due also to the laboratory staff who similarly spent long hours examining thousands of water and faecal samples in a very true endeavour to unravel a very difficult public health problem.

It is pleasing to state that the Department believes the media acted with great responsibility in reporting accurately and objectively the information given by the Department. Thanks is also given to those journalists who, when given certain information regarding the cholera investigation, confidential at the time, refrained from publication which may have hampered the processes of the investigation.

The outbreak of typhoid cases in a southern state was naturally given a wide coverage in the media. Shortly afterwards a quite unrelated case occurred in a young housewife who had contracted the disease outside the country. When the media was advised of these facts and told that there was no likelihood of an epidemic in this State they again acted correctly and the case was not given any more publicity than it deserved.

When salmonella was reported in baby foods manufactured outside the State, the Queensland Health Department was asked to announce immediately that a similar product from a Queensland plant was free of the organisms. This was one of those occasions when a decision regarding the timing of announcements had to be made. No clearance was given

until samples had been again checked by the Laboratory of Microbiology and Pathology. When this test was found to be negative the dissemination by the media of this information relieved many Queensland mothers who had been using the product.

It seems appropriate to mention here two subjects, other than infectious diseases, the reporting of which has been debated in health circles. These are the claims of success for unconventional treatment where traditional medicine has for various reasons been unsuccessful in its handling of a serious disease, often cancer, and the publicity sometimes given allegations that a commonly used food substance—the sweetening agents are recent examples—or a drug often prescribed has serious adverse effects. Two common alleged ill-effects are that the use causes cancer or that women will have deformed babies.

There are some in the health field who deplore such reports. The media has acted irresponsibly, they claim. This is often far from the truth and if anyone is acting irresponsibly it may be those scientists who report the matter to the media in the first place.

What is a health authority's responsibility in such cases. Scoffing at the claims out of hand is of course obviously the wrong course. The statements, if not already thoroughly examined, must be accurately researched. When the correct position is known the media must be given a clear authoritative outline based on authentic examinations.

Fortunately in Australia there are two responsible medical bodies who in many cases have made a thorough examination of such claims before they appear in the Australian media. They are the National Health and Medical Research Council and the Drug Evaluation Committee. Both these bodies have a membership of eminent medical and scientific experts. Their advice on such claims is invaluable to the various health authorities in Australia in depicting the true position.

In some cases the potential of the mass media to deliver health information is not recognised. This may be due to the lack of, or incorrect participation by the health authorities. The latter cannot afford to isolate themselves in an ivory tower and ignore the larger real world. There are some who do not approve of any of the things that happen in the media! There is an Arab saying—"It is better to light one small candle than curse the darkness".

STAFF

Dr B. E. Farmer was appointed to the position of Senior Health Officer and Dr D. Smith was promoted to Health Officer (Hospitals).

Dr J. V. Griffin joined the Department as Medical Officer in Training.

Dr D'Arcy Kelly, Health Officer, was awarded a Public Health Travelling Fellowship by the National Health and Medical Research Council to undertake a three months course in Sexually Transmitted Diseases at the University of London, after which he visited various centres in the United States of America to study their methods of treatment and control of these diseases.

Dr G. M. S. May retired from the position of Director, School Health Services in March. Dr May was appointed School Medical Officer in 1961 and was promoted to Director in 1963. During his fourteen years as Director, School Health Services continued to expand and several improvements were made. Parents of school children should be very grateful to Dr May for the services the division has rendered to the Queensland public under his direction.

Dr V. M. O'Hara, Medical Officer, School Health Services, was also awarded a Public Health Travelling Fellowship by the National Health and Medical Research Council to study recent trends in School Health Services and Community Paediatrics in Britain, Scandinavia, France and America. While in London she completed a post-graduate course in Developmental Paediatrics at the Wolfson Centre at the London University Medical School.

Dr G. Byth resigned from School Health Services and Drs R. Fitzhardinge and G. J. Stuart were appointed as School Medical Officers at Brisbane and Toowoomba respectively.

Dr T. Konstantinos resigned as Medical Officer, Chest Clinic.

Dr N. C. Connell resigned as Deputy Director of Psychiatric Services to take up a clinical post at the South Brisbane Psychiatric Clinic. He was replaced by Dr C. K. Brennan who was formerly in charge of the Neuro-Psychiatric Unit at Prince Charles Hospital.

Dr Joan Ridley took up the position of Medical Superintendent, Baillie Henderson Hospital and Dr B. Park, who had been acting in this position, returned to Toowoomba General Hospital. Dr A. M. Chardhary commenced duty as Psychiatrist and Drs J. Donnelly and T. B. Sadler as Medical Officers at Baillie Henderson Hospital.

Dr A. Freed replaced Dr J. T. Quinn as Senior Psychiatrist in charge of Alcohol and Drug Dependence Clinic and Dr R. Y. Smout resigned as Medical Officer in charge of the Alcoholism Clinic at Royal Brisbane Hospital.

Mr T. A. Harwood resigned as Senior Social Worker, Division of Psychiatric Services.

Dr A. Shearer returned to the Division of Welfare and Guidance after his secondment to Chief Office to the Management Services Unit. Drs N. O'Connor and M. Masel also returned to the Division after gaining experience elsewhere. New appointments included Drs R. W. Bailey, C. E. Breakey, P. M. Coghlan, N. S. Collings, S. J. Eckersley, P. A. Haycock, H. M. Hoey, K. McBryde, D. M. Morgensen, G. Morris, L. R. Reid, P. J. Tucker and P. R. Wills while Drs R. Anderson, C. Bennett, J. Bryant, B. Klug, and D. Webster resigned.

Dr P. Mitchell, Medical Officer in Charge of the Community Health Centre at Redcliffe was awarded a World Health Organisation Fellowship to study overseas developments in community health administration and implementation in Britain, Europe, America and Canada.

Dr D. M. Mahibir commenced duty as Medical Officer in Charge of the Community Health Services Centre in Townsville and Dr C. M. Evans as Part-time Medical Officer in Charge of the Community Health Services Centre at Mackay.

Dr C. T. Hammond commenced as Regional Geriatrician, Townsville, and Dr P. M. Miller as sessional Medical Officer in Charge of Community Home Care, Maryborough. Dr M. H. Tilse resigned from the Division of Geriatrics and Dr P. V. Brennan as Medical Officer in Charge, Community Home Care Service, East Brisbane and was replaced by Dr R. J. Cargill.

Dr R. A. Sloane resigned from the Aboriginal Health Programme and Dr R. P. Davison was appointed to that service.

Mr C. J. Murray retired as Chief Inspector of Foods after forty-nine years service with the Department in various capacities and many areas of the State. Mr Murray had an expert knowledge of food legislation and was instrumental in maintaining the high standard of food supervision carried out in Queensland.

Mr C. James also retired as Senior Health Inspector after forty-two years service in country areas as well as in Brisbane. He also gave many years of loyal service to the Department.

Mr W. J. Shields was appointed to the position of Chief Inspector of Foods and was replaced by Mr K. Keefer as Secretary to the Director-General of Health and Medical Services.

Mr J. E. Holliday retired as Chief Officer, Health Education Division during the year. Mr Holliday joined the Health Education Council as Publicity Manager in 1948 and played a large part in the development of health education in Queensland.

Mr R. Smith was appointed to the newly created position of Co-ordinator of Country Laboratories in the Laboratory of Microbiology and Pathology.

SECTION OF EPIDIMIOLOGY

Reference is made elsewhere in this report to the publicity that surrounded the reports of cholera, typhoid and salmonella in baby foods. Although the reports of these cases excited a lot of attention they were not part of any large scale epidemics. In fact there was only one case of cholera reported although the husband of the sufferer did show very mild symptoms also. There was only one case of typhoid reported in the State for the year. There were more cases of salmonella but there was certainly no epidemic.

Likewise with other infectious diseases no serious outbreaks were notified. For those diseases for which we have satisfactory immunising agents such as diphtheria, poliomyelitis and tetanus the notifications were few indeed—two cases of diphtheria, no cases of poliomyelitis and three cases of tetanus. This indicated that the people of Queensland, particularly parents heed the advice of Health Education to take advantages of immunisation programmes. What a delightful change from the days before immunisation. In 1950–52, there were over 100 deaths from some 1 000 cases of poliomyelitis with hundreds more left disabled. In 1921 there were 124 deaths in 2 434 cases of diphtheria.

There are, of course, still cases of communicable disease reported. There was very little change in the number of cases of venereal disease reported and as usual these are only some of the cases occurring as private practitioners refrain from notifying. Despite endeavours at contact tracing and health education there is no evidence of any reduction in the incidence. It is a problem which no western country appears to be solving. Hepatitis still occurs in relatively large numbers and until medical science gives us a suitable vaccine the only measure available is attention to personal hygiene.

A report on Tuberculosis is contained elsewhere where it is seen a plateau of approximately 200 cases a year has been reached. Malaria cases still constitute a fair proportion of the total of communicable diseases notified. These, apart from three cases occurring in the Torres Strait area, were all contracted outside the State. One pleasing reduction is the decrease in the cases of ancylostomiasis reported. A total of 183 cases reported in the previous year was reduced to 17. It is believed that much of this reduction is due to the success of the Aboriginal Health Programme.

DRUGS AND POISONS SECTION

Two factors have made the work of the Drugs and Poisons Section more important and more onerous. Firstly, in the years since World War II modern technology has resulted in a tremendous increase in the drugs coming on to the market—almost daily a new drug is available for the physician to prescribe, for the pharmacist to dispense. Unfortunately, and this occurs mainly overseas, drugs have been introduced which have produced adverse as well as beneficial results. One has only to think of the sad thalidomide story to illustrate this.

Fortunately for Australia, many of these side effects are discovered before the drug is introduced here. This does not mean that Australia depends solely on overseas experience to monitor drugs. The important Australian Drug Evaluation Committee acts as watchdog on the drug scene in this country. The advent of this considerable increase in drugs has meant that a wide variety of drugs needs scheduling in Poisons Regulations, and prescribing and dispensing requires supervision.

The second influence adding to the work of this Section is the sad story of the non-medical use of drugs. Whilst the main source of the illicit drug trade is overseas and is outside the responsibility of the Department, the Drugs and Poisons Section is vitally concerned with leakage from the licit trade such as forging of prescriptions, breaking and entering, and the occasional, fortunately only very occasional, abuse of privilege given to professionals to handle drugs in their legitimate practice.

The Section has handled these added responsibilities admirably while at the same time it has carried out its routine work.

SECTION OF FOOD SUPERVISION

Modern technology has added to the traditional food stuffs such as meat, bread, butter and milk, a whole new array of canned foods produced in the factory by sophisticated methods. The principles of food supervision by a health department has, however, not changed. The Department has a responsibility to assure the public that the food it buys reaches a prescribed standard in regard to components, is not adulterated in any way, and is truthfully described so that the individual can be satisfied that what he reads on the label correctly describes the product.

In addition to an inspection of food premises where food is sold or prepared for consumption health officers must continually submit samples for chemical and bacteriological analysis. The two service laboratories, namely Government Chemical Laboratory and the Laboratory of Microbiology and Pathology, are essential in the supervision of food available to the public. These laboratories determine whether or not the various components are present in the proper quantity and quality as well as the presence or absence of chemical or bacteriological adulteration.

The various State Health Departments in Australia rely heavily on the recommendations of the Food Standards Committee of the National Health and Medical Research Council for formulating standards. Through this agency there has been much progress in reaching uniformity throughout Australia.

SECTION OF ENVIRONMENTAL SANITATION

Sometimes in this present era of sophistication and rapid technological advances in medicine the fundamental measures necessary to ensure a high standard of public health are forgotten. During the year the Department was forcibly

reminded of one of these fundamentals—the provision of a safe water supply. The reporting of cholera occurring in a woman living in a caravan camp at Beenleigh triggered off one of the most extensive public health investigations the Department has undertaken. Tribute is paid here to the efficiency of the health inspectorial staff in this investigation. Immediate steps were taken to track down the source. Samples taken from the water reticulated to the town revealed evidence of the organism. The swift action taken to cut off the source of the contaminated water and provide an alternate supply from Brisbane deserves great praise and the inspectorial staff involved are commended. Then followed several days in which the river system was combed to its source for possible points of entry of the organism. The staff worked tirelessly for long periods in the field.

Whilst these events attracted a lot of publicity, routine work of the section continued throughout the year and Queensland should be thankful that it has a dedicated health inspectorial staff who are prepared to tackle what are sometimes humdrum tasks but which are so essential to safeguard the health of the public.

DIVISION OF TUBERCULOSIS

One of the success stories in the public health field in recent years is the campaign against tuberculosis once a scourge of civilisation. In the early years of the campaign the number of tuberculosis cases notified in Queensland was over 900 in one year with a notification rate of 74.1 per 100 000. The deaths from the disease in Queensland numbered over 200 in the early years to give a death rate of 19.8 per 100 000. In the last five years the notifications have been reduced to 200 plus with a notification rate of approximately 10 per 100 000 population. The deaths in 1975 were 27 or a death rate of 1.3 per 100 000. This is very pleasing but it would appear that a plateau has now been reached as the annual notification and death rates have remained fairly constant for the last six years.

With this continued number of cases being found it is still necessary to continue control measures and reduce infection by active case finding in the older age group in the community as it is from such people that the cases are now being reported.

In addition to reduced numbers of cases being found, the period of hospitalisation needed in the active cases is also reduced. Some cases do not even need hospitalisation. The large tuberculosis hospitals and annexes built twenty years ago are now not needed for tuberculosis sufferers.

Those concerned in this fine achievement are to be congratulated but they would be the first to admit there must be no complacency.

MATERNAL AND CHILD HEALTH

It is often said that a nation's attitude towards the social and medical welfare of its people can be gauged by the health of its mothers and babies. The indices of maternal and infant mortality are compared with figures for these rates in other countries. In 1975 Queensland had its lowest maternal and infant mortality rates ever recorded. There were no maternal deaths and the infant mortality rate was 15 per 1 000 live births. The 1976 figures are again very pleasing. Although a little higher than 1975, the maternal mortality rate of 0.14 per 1 000 and the infant mortality rate of 15.2 per 1 000 are the second lowest ever recorded for the State. Elsewhere in this report, reference is made to the marked reduction in Aboriginal infant mortality rates.

It is appropriate to pay tribute here to two of the most important committees in the health field, namely the Maternal Mortality Committee and the Perinatal Mortality Committee. Members of these two committees give their time voluntarily to analysing all maternal deaths and a very great proportion of perinatal deaths that occur in Queensland. The committees endeavour to identify the causes of these deaths, whether they be the failure to seek medical attention, or errors of judgement in management. Education in the way of bulletins and lectures is then instigated.

The falling birth rate was again responsible for fewer attendances at infant clinics but these are still giving excellent service for thousands of Queensland mothers and babies.

DIVISION OF HEALTH AND MEDICAL PHYSICS

In this age of rapid technological advance it is, of course, not unexpected that medical diagnosis and treatment is aided by a vast collection of sophisticated equipment. This has resulted in several problems. New equipment is expensive and expert advice is needed in its selection. Whilst it is realised that not all hospitals in Queensland should have all the latest equipment it is essential that they should have that

which is necessary to carry out services appropriate to the local scene. Not all doctors are competent in the use of some of the latest equipment. Maintenance in country areas is a great problem.

The Department has solved some of these difficulties by giving new tasks to the Division of Health and Medical Physics. By adding to its staff of X-ray engineers and electronic technicians and asking it to provide a service to answer many previously unsolved questions, order has been brought into what may have become chaos. Advice is given in the assessment and purchase of electro-medical equipment, and routine maintenance and repair provided to country hospitals for a wide variety of equipment. Coupled with this is advice to country medical and nursing staff in the use of the equipment.

The Division has a second important function in monitoring the hazards associated with the use of ionising radiation and microwaves in industry, medicine and research.

SCHOOL HEALTH SERVICES

In our present day competitive world children should be given every opportunity to receive the best education available. Every endeavour must be made to remove any obstacle that prevents this. One possible obstacle is the presence of an undetected physical or mental handicap not receiving the treatment it should. A child with defective vision or defective hearing is obviously disadvantaged in the classroom. Often these defects are unknown to the child and the parents. The careful, methodical school health examinations have found many such defects which, when corrected, allow the child to take full advantage of his schooling. Since the Division commenced as a Branch of the then Department of Public Instruction in 1911, thousands of children have been examined and thousands of defects corrected.

Whilst in the past the examinations have concentrated on physical defects there is currently a move to place just as much importance on the defection of emotional handicaps. There is also a change in physical handicaps found. Obesity and scoliosis are being found in greater incidence.

No school health programme can function successfully in isolation. It is part of a whole array of children's services including the child's own medical practitioner, specialist paediatricians, special education, and all the associated handicapped children's services, many of which are voluntary organisations. Liaison with all these is part of the duties of the School Health Services Division.

DIVISION OF PSYCHIATRIC SERVICES

It is pleasing to record once again several advances in the achievements of the Division of Psychiatric Services.

Probably the most important of these was in the field of the intellectually handicapped whose management has now been separated from the psychiatrically ill patients with whom they were included.

A new caring profession for the intellectually handicapped is now well established with a special course for residential care workers being conducted by an Advanced College of Education. It was with great pride that those associated with the Division attended the opening by the Honourable the Minister for Health of a new villa complex which constitutes the new development of the Basil Stafford Training Centre.

The Division's progress is hampered to a certain extent by a shortage of psychiatrists—a shortage not peculiar to this State. There has been an increase of qualified staff from overseas but this constitutes a short-term solution. The long term solution is expected to come from the training of local graduates. It is expected that this will come from the recently established rotational registrar training programme.

The staff position in the paramedical field was greatly strengthened during the year by the addition of new graduates in several areas.

Progress was also made in the drug and alcoholism field. The methadone programme was reviewed and planning for expansion of alcoholism services is well under way. The Division is looking forward to the opening of new quarters for these services in Roma Street during the coming year.

DIVISION OF YOUTH WELFARE AND GUIDANCE

Many a medical student has received admonitions from his teachers that he has regarded a patient simply as a case and not as a whole person. One Division of the Department that is dedicated to examining the whole patient and just not the symptoms presenting is the Division of Youth Welfare and Guidance. When a child presents, the whole environment is studied in order that help may be given. Factors are sought

in the family setting and the school situation. Parents sometimes have to learn different child management techniques. The school teacher also may be able to contribute in placing the child on the way to recovery.

It pleasing to report some improvement in the staff position and more examinations have been conducted during the year by recruiting in a field which has a worldwide shortage of experts.

Another improvement worthy of mention is the opening of a new building with well appointed modern facilities to accommodate the Townsville Institute of Child Guidance. New quarters have been found also at Toowoomba where the centre has been transferred to Tourist Road where it will be working in close association with the Community Health Centre.

DIVISION OF DENTAL SERVICES

A study of the map included in the sectional report on the Division of Dental Services reveals that dentists from this Division cover all areas of the State. It also illustrates that private dental practitioners like other professionals are in the most part unwilling to set up practice in areas away from the coast. Without the hospital based dental clinics most people living west of the Great Dividing Range would be without dental facilities.

An innovation being welcomed by the dentists in the hospital clinics is the servicing of dental equipment by the Health and Medical Physics Division.

Since the introduction of the School Dental Branch of the then Department of Public Instruction in 1911 many school children received dental attention by school dentists. Their work was confined to schools in remote areas of the State. Apart from the Rail Dental Clinics, the equipment was of a portable nature set up in the schools themselves. An ambitious plan to provide regular dental care for all Queensland primary school children by 1980 has been formulated. The ranks of the school dental service will be increased by school dental therapists and hospital based dentists will also service schools in proximity to Rail Clinics.

It is hoped that the school dental therapist training programme will not be curtailed by lack of Commonwealth finance by which the scheme is partly funded.

LABORATORY OF MICROBIOLOGY AND PATHOLOGY

The Laboratory of Microbiology and Pathology provides a service for the public health divisions of the Department, as well as clinical laboratory services in the metropolitan area and for country hospitals. The Laboratory has a fine reputation for the high standard of its work.

Much of its work is of a routine nature with its scientists carefully examining and reporting on specimens submitted by the Public Health Division and doctors asking for diagnostic help. The Laboratory has always been prepared to render extra services when the Department is presented with an urgent public health problem. These additional duties have always been executed in a highly efficient manner. This was clearly illustrated when bacteriological help was needed after the case of cholera was diagnosed in the Beenleigh area. Suddenly the Laboratory was asked to cope with hundreds of samples of water and faeces. It was the Laboratory's Bacteriological Section which indicated the extent of the contamination; it was the Laboratory that gave the longed-for results that the Beenleigh water supply was clear; it was the Laboratory that was asked for a diagnosis of water samples taken at regular intervals along the whole course of the Albert River and its tributaries. It meant many hours of painstaking work and grateful thanks are given to the staff who stuck to their task for days.

The Country Pathology Committee which has depended so much on the advice and work of the Laboratory staff has resulted in great improvement in the standard of pathology services in country hospitals throughout the State.

The Virology Section of the Laboratory continues to render valuable help in the diagnosis of disease resulting from this type of organism.

THE GOVERNMENT CHEMICAL LABORATORY

The Government Chemical Laboratory like its sister Laboratory of Microbiology and Pathology is tremendously important in the scheme of things in public health but does not come into the limelight as do some other Divisions. It is a silent service but its reports have a great bearing on maintaining a high standard of public health.

It is on the Government Chemical Laboratory that the public health officer depends for advice as to whether such and such a food is up to standard and free of contaminants.

It reports on the traditional foodstuffs as milk and bread as well as all the new canned foods turned out by more sophisticated methods.

The Chief Inspector of Drugs and Poisons asks for reports on hundreds of drugs, poisons, cosmetics and domestic products.

The forensic pathologist sends his specimens from autopsies to help solve the cause of deaths. The Police seek advice on the identification of drugs from the illegal drug trade and of blood and other specimens in suspected foul play cases.

The Division of Industrial Medicine solicits aid to determine whether the health of workers is threatened by over exposure to substances used in their work environment.

It is not only the Health Department that benefits from the Laboratory's exact and dependable analyses, State Departments of Mines, Irrigation and Water Supply, Works, Housing and State Stores Board need its help and so do the Commonwealth Department of Agriculture and Bureau of Customs.

It is pleasing to report that it has been possible to add high quality equipment to the Laboratory's facilities to enable its expert staff to carry out its very important work.

DIVISION OF GERIATRICS

The number of people in Queensland over 65 years of age constitutes about ten per cent of the total population. Most of these people live independent lives, either in their own homes or with relatives.

There are some, however, who due to increasing disability seek support. Because of a different set of attitudes or physical circumstances the proportion of families who are disinclined to look after grandparents is growing. The elderly people involved often seek admission to private and church nursing homes or State institutions.

The Division of Geriatrics provides support for many elderly people and helps a good number to continue to live in familiar surroundings in their own homes in dignified circumstances. A team effort of doctors, public health nurses, social workers and community home care workers, is helping to solve a major public health problem.

The Division also acts as a liaison between hospitals and the community. It helps those patients and relatives who can no longer cope in finding alternate accommodation.

The Community Home Care Programme provides home help after the elderly client has been carefully assessed medically.

The State is by no means the only agency involved in the care of the elderly and tribute is paid to the thousands of people who assist voluntary organizations in home nursing services, meals on wheels and service clubs in providing wonderful services to our elderly people.

DIVISION OF NURSING

The year under review has seen very important legislation introduced in the field of nursing. The Nursing Act made important amendments in the field of registration and related subjects. The Nursing Studies Act, introduced for the first time, incorporated new ideas in the training of nurses. For the first time, certainly in Queensland and no doubt in many other parts, nurses themselves will control nurse training. A Board of Nursing Studies with a nurse Chairman and consisting mainly of nurses will control all nursing education in the State.

The Division of Nursing, despite its close involvement in the work related to the examination of proposals leading to the introduction of the above legislation, continued its important role of advising the Department, hospitals, nurses, and potential trainees in many aspects of nursing.

The Department continued its awarding of scholarships to nurses to study in various post-basic courses run by the College of Nursing, Australia, both in Brisbane and Melbourne.

DIVISION OF COMMUNITY MEDICINE

The concept of community medicine heralded with delight in the last few years by the academics, health authorities and many of the medical profession has been interpreted in two different ways. The idea was nurtured in England almost thirty years ago. Under one roof all the support services possible were to be given to general practitioners delivering primary health care. Here would be practised every conceivable aspect of medicine which had been available in a fragmented fashion from many agencies—private and governmental. Preventive medicine such as immunization programmes

and support services given by social workers and therapists would with the traditional doctor give an all round community service. A few health centres were built but the idea languished until fairly recently when improved facilities for the general practitioner resulted in a sudden expansion.

The English version has been copied in many States in Australia. In Queensland however, the community health centres have, in the main, acted as support services to the general practitioner still practising in his own rooms. Public health nurses, social workers, psychologists, therapists and home care workers assist the local doctor to support the patient in the community.

It is unfortunate that restriction of Commonwealth funds has contained any expansion during the year but those centres already established were able to maintain the services instituted in the previous year.

DIVISION OF HEALTH EDUCATION

This Annual Report includes for the first time a sectional report on health education. For many years health education in Queensland has been the responsibility of the Queensland Health Education Council. Under its guidance Health Education officers provided a free programme to the public of Queensland and it is appropriate that the Department's gratitude to the members of the Council who gave many hours of their time voluntarily in guiding the programme since the inception of the Council should be recorded here.

In 1976, the Health Act was amended to bring Health Education under the ambit of the Department.

Health education is not restricted to the activities of a Division of Health Education. It includes a mother's admonitions to her children, grandmothers' tales—many of them often true—the neighbour's advice over the fence, articles in the popular press, television programmes, as well as the health professional in his day to day practice. As a result the public has acquired good knowledge and in some instances good health habits.

The acquisition of knowledge in itself is not health education. Habits must change for health education to have been effected. The mother learns that immunization prevents diphtheria and has her child immunized; health education has taken place. The public learns that smoking causes lung cancer but continues smoking; the health education has failed. The public apparently decides which advice it will take. It makes interesting debate.

PARAMEDICAL ADVISERS

Health Services are no longer a simple business as they once were; new knowledge and new techniques have made them a rather complex matter. The medical profession in recent years has seen a proliferation of specialists and also the profession is now supported by a considerable number of paramedicals. The output of any system depends on the input which needs a balance of expertise from many quarters. In a move towards achieving some semblance of balance the Department looks for advice from the paramedical professions.

In recent years it has added to its headquarters staff, Advisers in Occupational Therapy and Pharmacy. The sectional reports from these indicate that their work includes the giving of advice to the Department in the provision of services in addition to acting as a link with their respective professions.

While establishments for paramedical workers in the hospitals and institutions throughout the State are not completely filled, there has recently come available many more applicants in most areas. This is a welcome change to only a few years ago when the ranks of such support services were very thin indeed. It is hoped that this trend will continue so that the belief that provision of health care is a team effort can actually be realised in practice.

ABORIGINAL HEALTH

It is only in the last decade that real attempts have been made to improve the health of the Aboriginal people. Records of illnesses before the coming of white man are non-existent but it is no doubt true to say that in his own way of life the Aborigine suffered from few epidemics. This was not due to any immunization programme or great attention to hygiene; the Aboriginal race was then not exposed to many white man's diseases; they were nomads and therefore did not suffer the results of any defects in hygiene because they moved on to other areas. Generally they lived in small tribes and did not suffer the epidemics of crowds.

Today their way of life is changed. There are at least three life styles: Aborigines living in large cities; in small country towns often on the outskirts; and on Aboriginal settlements. Records of illnesses amongst these various groups are fairly recent. They show a high infant mortality rate, malnutrition in children and parasitic infestation.

These are some of the defects at which the Queensland Aboriginal Health Programme has aimed. Although the Programme has been functioning for a short period, there has already been significant improvements in an area which it was predicted would take generations to change. The infant mortality rate, although still high, has fallen from 112 per 1 000 live births in 1962-66 to 79.5 per 1 000 in 1972-74 and 60.6 in 1975-76. It is expected that continued efforts will reduce the rate still further over the years till

it is comparable with European figures. There have been marked improvements also in the prevalence of malnutrition and parasitic infection.

VITAL STATISTICS

Population

A preliminary estimate of population in Queensland at 31st December, 1976, was 2 121 600. The estimated increase during the year 1976 was 21 700 of which 18 004 was natural increase. The estimated population of the Brisbane Statistical Division at 30th June, 1976, was 985 920, 46.7 per cent of the Queensland total. The population density per square kilometre for the Brisbane Statistical Division is 328.64, for the remainder of Queensland 0.65; and for all Queensland is 1.22 persons.

TABLE I

ESTIMATED POPULATION OF AUSTRALIAN STATES AND PERCENTAGE OF AUSTRALIAN POPULATION IN EACH STATE.
31ST DECEMBER¹, 1971-1976

Year	New South Wales		Victoria		Queensland		South Australia		Western Australia		Tasmania		Australian Capital Territory	Australia
	Number	Per Cent.	Number	Per Cent.	Number	Per Cent.	Number	Per Cent.	Number	Per Cent.	Number	Per Cent.	Number	Number
1971 ..	4 711 900	36.1	3 567 000	27.3	1 885 600	14.4	1 195 600	9.2	1 061 700	8.1	393 100	3.0	151 800	13 062 700
1972 ..	4 764 900	35.9	3 617 700	27.2	1 945 900	14.7	1 209 700	9.1	1 082 400	8.2	395 100	3.0	164 000	13 280 700
1973 ..	4 811 000	35.7	3 661 200	27.1	2 007 800	14.9	1 227 300	9.1	1 104 300	8.2	398 000	3.0	175 200	13 489 600
1974 ..	4 875 700	35.6	3 711 900	27.1	2 067 100	15.1	1 253 600	9.1	1 138 500	8.3	402 900	2.9	185 400	13 708 900
1975 ..	4 894 800	35.3	3 732 200	26.9	2 099 900	15.2	1 257 300	9.1	1 159 200	8.4	406 700	2.9	200 600	13 849 100
1976 ..	4 933 000	35.3	3 764 900	26.9	2 121 600	15.2	1 268 800	9.1	1 183 700	8.5	409 300	2.9	206 100	13 987 600

¹ Subject to revision.

Births

During 1976 births registered in Queensland numbered 35 243, 1 160 fewer than in 1975. There were 18 005 male and 17 238 female babies born giving a masculinity rate of 104.

Because the population figures are subject to revision, crude birth, marriage and death rates, which are calculated on mean population, are also subject to revision.

The crude birth rate per 1 000 mean population fell to 16.7 from 17.5 in 1975. This follows the general decline in birth rates in developed countries.

TABLE II

CRUDE BIRTH RATE (PER 1 000 POPULATION)

—	1972	1973	1974	1975	1976
Commonwealth of Australia	20.1	18.5	18.0	16.9	16.4
Queensland	20.5	19.3	18.6	17.5	16.7
New South Wales	20.1	18.2	17.8	16.6	16.0
Victoria	20.0	18.5	18.0	16.6	16.2
South Australia	18.2	16.8	16.3	16.0	15.0
Western Australia	20.7	18.8	18.1	17.7	17.7
Tasmania	19.9	18.5	18.5	17.3	16.4
New Zealand	21.8	20.5	19.5	18.3	*
United Kingdom	14.9	13.9	13.2	12.5	*
United States of America ..	15.6	15.0	15.0	14.7	*
Canada	15.9	15.5	15.4	*	*

* Not available.

There were 4 664 ex-nuptial births registered in 1976. This represents 13.2 per cent of total births. Approximately 39 per cent of the ex-nuptial births were to mothers aged 19 and under.

Marriages

Marriages registered in 1976 totalled 16 711 compared with 15 230 in 1975, the marriage rate being 7.9 per 1 000 mean population. There were 2 665 males and 7 027 females aged under 21 married. Of these, 33 males and 1 045 females were aged under 18.

Deaths

The number of deaths registered in Queensland was 17 239 giving a crude death rate of 8.2 per 1 000 mean population. The major causes of death were diseases of the heart (34 per cent), malignant neoplasms, including neoplasms of the lymphatic and haematopoietic tissue (16 per cent) and vascular lesions affecting the central nervous system (14 per cent).

In every 100 male deaths 47 died of heart disease or cerebrovascular lesion, 16 of cancer and 8 of accident. In every 100 female deaths the respective figures were 50, 16 and 4.

There were 5 maternal deaths registered during 1976.

Table III compares crude death rates for Queensland, other States and some overseas countries from 1972 to 1976.

TABLE III

CRUDE DEATH RATE (PER 1 000 POPULATION)

—	1972	1973	1974	1975	1976
Commonwealth of Australia	8.3	8.3	8.5	7.9	8.1
Queensland	8.7	8.5	8.9	7.9	8.2
New South Wales	8.8	8.6	9.1	8.3	8.6
Victoria	8.3	8.4	8.4	7.9	8.2
South Australia	8.1	8.1	8.3	7.9	7.9
Western Australia	6.9	7.2	7.0	7.0	6.6
Tasmania	8.2	8.4	8.7	8.3	8.3
New Zealand	8.5	8.5	8.3	8.1	*
United Kingdom	11.5	11.5	11.5	11.4	*
United States of America ..	9.4	9.4	9.1	8.9	*
Canada	7.4	7.4	7.4	*	*

* Not available.

Infant Mortality

Infant deaths numbered 535. Of these 237 died during the first day of life and 407 during the first month. The infant mortality rate increased from 15.0 in 1975 to 15.2 in 1976. The rate for the Brisbane Statistical Division decreased from 14.5 to 12.3 while the rate for the remainder of the State rose from 15.5 to 17.6. Infant mortality rates for Queensland, other States and certain overseas countries are shown in Table IV.

TABLE IV

INFANT MORTALITY RATES (DEATHS UNDER ONE YEAR PER 1 000 LIVE BIRTHS)

—	1972	1973	1974	1975	1976
Commonwealth of Australia	16.7	16.5	16.1	14.3	13.8
Queensland	17.8	17.5	16.0	15.0	15.2
New South Wales	17.5	17.1	16.6	15.2	14.7
Victoria	14.6	14.3	14.9	13.0	11.6
South Australia	16.8	13.5	15.5	11.1	14.6
Western Australia	15.7	19.2	16.2	13.3	13.2
Tasmania	16.2	18.7	16.6	18.3	11.5
New Zealand	15.6	16.2	15.5	16.0	*
United Kingdom	17.5	17.2	16.7	16.0	*
United States of America ..	18.5	17.6	16.5	16.7	*
Canada	17.1	16.8	15.0	*	*

* Not available.

The causes of death of residents of Queensland are shown in Table V.

TABLE V
SHOWING CAUSES OF DEATHS REGISTERED IN QUEENSLAND, 1976

Cause of Death	I.C.D. No.	1975	Males	Females	Total
Tuberculosis of Respiratory System	010-012, 019-0	25	19	5	24
Tuberculosis, other	013-018, 019-1-019-9	3	..	2	2
Diphtheria	032 .. .. .	..	..	..	..
Whooping Cough	033	1	..	..	..
Tetanus	037	1	4	..	4
Acute Poliomyelitis	040-043 .. .. .	..	..	..	..
Measles	055	1	2	1	3
Infectious Hepatitis	070	9	5	3	8
Other Infective and Parasitic Diseases	Remainder of 000-136	107	44	46	90
Malignant Neoplasms	140-199	2 542	1 589	1 161	2 750
Neoplasms of Lymphatic and Haematopoietic Tissue	200-209	255	175	108	283
Neoplasms, Benign and Unspecified	210-239	25	12	16	28
Diabetes Mellitus	250	214	111	129	240
Other Endocrine, Nutritional and Metabolic Diseases	240-246, 251-279	47	32	27	59
Anaemias	280-285	30	15	14	29
Other Diseases of Blood and Blood-Forming Organs	286-289	13	5	7	12
Mental Disorders	290-315	217	107	82	189
Paralysis Agitans	342	54	19	21	40
Other Diseases of Nervous System and Sense Organs	320-341, 343-389	118	64	40	104
Hypertensive Disease	400-404	204	82	85	167
Acute Myocardial Infarction with Hypertension	4100	470	268	258	526
Acute Myocardial Infarction without mention of Hypertension	4109	3 139	2 247	1 131	3 378
Other Ischaemic Heart Disease with Hypertension	4110-4140	120	62	37	99
Other Ischaemic Heart Disease without mention of Hypertension	4119-4149	1 243	748	480	1 228
Cerebrovascular Disease with Hypertension	4300-4380	474	197	309	506
Cerebrovascular Disease without mention of Hypertension	4309-4389	1 843	833	1 100	1 933
Other Diseases of Circulatory System	Remainder of 390-458	1 313	657	639	1 296
Influenza	470-474	21	22	25	47
Pneumonia, All Types	480-486	365	258	251	509
Bronchitis, Emphysema and Asthma	490-493	528	532	121	653
Other Diseases of Respiratory System	Remainder of 460-519	118	79	69	148
Diseases of Oesophagus, Stomach and Duodenum	530-537	100	67	36	103
Appendicitis	540-543	8	4	4	8
Intestinal Obstruction and Hernia	550-553, 560	48	15	16	31
Cirrhosis of Liver	571	112	102	28	130
Other Diseases of Digestive System	Remainder of 520-577	121	67	100	167
Nephritis and Nephrosis	580-584	178	107	110	217
Infections of Kidney	590	76	25	41	66
Diseases of Male Genital Organs	600-607	33	22	..	22
Other Diseases of Genito-Urinary System	591-599, 610-629	35	12	19	31
Complications of Pregnancy, Childbirth and the Puerperium	630-678 .. .. .	..	..	5	5
Diseases of Skin and Subcutaneous Tissue	680-709	16	8	8	16
Diseases of Musculoskeletal System and Connective Tissue	710-738	63	32	63	95
Congenital Anomalies	740-759	176	98	93	191
Certain Causes of Perinatal Mortality	760-779	289	157	132	289
Senility without mention of Psychosis	794	27	8	21	29
Symptoms and Ill-Defined Conditions	780-793, 795-796	102	61	43	104
Motor Vehicle Traffic Accidents	810-819	655	399	161	560
Accidental Falls	880-887	173	91	80	171
Accidental Drowning and Submersion	910	97	74	23	97
Other Accidents	Remainder of 800-949	270	187	52	239
Suicide and Self-Inflicted Injury	950-959	288	193	64	257
Homicide and Injury Purposely Inflicted by Other Persons	960-969, 970	54	30	25	55
Other External Causes of Injury	980-999 .. .. .	..	1	..	1
Total from All Causes .. .. .	..	16 421	9 948	7 291	17 239

Diseases of the circulatory system, most of which were degenerative lesions of the heart and central nervous system, were responsible for 53 per cent of all deaths. Numbers of these occur in old people and hence are at present largely unavoidable. However, an increasing number of deaths due to ischaemic heart disease are occurring in middle aged males. Some of these are preventable, because many middle aged men are overweight and are heavy smokers, both of which are known to increase the probability of death. Cancer accounted for 16.0 per cent of deaths. Deaths due to motor vehicle traffic accidents numbered 560 (655 in 1975).

DIVISION OF PUBLIC HEALTH SUPERVISION

Deputy Director-General of Health and Medical Services: P. G. LIVINGSTONE, M.B., B.S.(Qld), M.R.C.P. (Ed.), D.P.H.(Syd.), F.A.C.M.A.

Senior Health Officer: B. E. FARMER, M.B., B.S.(Qld), D.H.A.(University of N.S.W.), F.A.C.M.A.

Health Officers:
D. KELLY, A.M., M.B., B.S.(Qld), F.R.A.C.G.P.
R. ROGERS, M.B., B.S.(Qld), D.P.H.(Syd.)
D. SMITH, M.B., B.S.(Qld)

Chief Inspector of Drugs and Poisons: R. A. BURKE

Chief Inspector of Environmental Sanitation:
R. C. G. C. CUFFE

Chief Inspector of Foods:
C. J. MURRAY (retired 30-7-76)
W. J. SHIELDS (from 11-9-76)

Secretary to the Director-General:
W. J. SHIELDS to 11-9-76
K. F. KEEFER from 11-9-76

DISTRICT HEALTH INSPECTORS

Southport: R. V. HOLMES
Toowoomba: J. H. CARNEY
Bundaberg:
A. NEILSON to 27-11-76
M. J. PRICE from 27-11-76
Rockhampton:
R. J. LOWRY to 11-9-76
J. C. HORNE from 11-9-76

Mackay: A. G. TAYLOR
Townsville:
W. R. MITCHELL to 27-11-76
A. NEILSON from 27-11-76
Cairns: P. B. CONLON

SECTION OF EPIDEMIOLOGY

For the 12 months ending 30th June, 1977, the notifications of Notifiable Diseases (excluding Venereal Diseases) appear in Tables VI and VII.

In order of frequency of notification, total numbers of these diseases are listed and compared with the previous year's figures:—

Disease	Metropolitan	Extra Metropolitan	Totals 1976-77	Totals 1975-76
Hepatitis A	88	217	305	437
Q. Fever ..	64	304	368	277
Tuberculosis	96	140	236	218
Shigellosis ..	53	24	77	74
Malaria ..	19	37	56	68
Salmonellosis	17	34	51	14
Meningitis ..	29	16	45	37
Amoebiasis	28	5	33	54
Hepatitis B	12	14	26	4

There have been no major changes in prevalence of disease in Queensland in this period.

On several occasions various types of epidemic have been reported. These have usually been informally notified and, as a result, advice has been given per telephone, or the area visited and the situation investigated.

Although these instances of informal notification are not infrequent, it is rare for formal notifications to follow, and consequently recorded figures for "Food Poisoning", "Shigellosis", "Salmonellosis" and "Diarrhoea in a closed institution" etc. don't provide a true indication of the occurrence of these conditions throughout the State.

Despite the above facts, this section welcomes early notification of disease outbreaks of whatever type and wherever they may be. This early advice allows the Department to identify morbidity patterns and to instigate early control measures should that action become necessary.

Such a situation developed where a patient with cholera was notified recently.

Cholera

On 18th February, 1977, the Medical Microbiologist at the Princess Alexandra Hospital notified this section of the presence of a female patient with Cholera.

In an attempt to identify the source and method of transmission, field investigations were conducted by officers of this section. Numerous residents of the town of Beenleigh and the catchment areas of the Albert and Logan Rivers were interviewed and investigated where necessary. Numerous water samples were collected.

The efforts of both local authority officers and our own officers were directed towards achieving adequate chlorination of the public water supply, monitoring of that water supply, monitoring of the sewerage treatment plants involved, and provision of general advice for the maintenance of the health of the public.

It was shown that, whereas the Beenleigh water reticulation had been polluted by a complementary supply from the Albert River, introduced control measures were effective in eliminating the pollution within one week.

In addition only one other patient had *V. cholerae* organisms isolated from his faeces and his gastrointestinal illness was relatively mild.

For this period between mid February and early May, 1977, continuous monitoring of the Beenleigh water reticulation and the Albert and Logan Rivers occurred until *V. cholerae* were no longer isolated from any sample.

A further example of the action taken on receipt of notification of disease is as follows:—

Epidemic (?Viral) Gastroenteritis

An epidemic of vomiting and diarrhoea was informally notified from a school camp on the Gold Coast.

At two successive camps, a proportion of the residents became sick in a similar fashion, and although the illness was relatively mild, its presence caused a concern to those in charge.

The development of this illness suggested that transmission occurred via a common medium but an investigation of patients and possible common media produced negative results.

Even though the cause of the epidemic was not identified, observations of the food handling practices and procedures revealed basic inadequacies which were communicated to the responsible authorities. This advice should provide long term benefit for the management of future camps.

While there was no subsequent formal notification of disease in this instance, informal notification and departmental action helped protect the health of the public which is our main function.

Hepatitis A

Again this disease is the one most frequently notified after the sexually transmitted diseases, but the total number of such notifications shows a decrease which continues the downward trend of the last 4 years.

The Exploratory Hepatitis Survey mentioned in last year's report was completed on 30th June, 1977. Analysis of the data collected has not yet been completed. When this is achieved, features of the disease in this State will be documented and hopefully these will lead to better understanding of its epidemiological characteristics.

Age distribution of the patients notified shows no unusual changes when compared with previous years.

Q. Fever

Actual submitted notifications are complemented by those from serological test results from the Laboratory of Microbiology and Pathology. In this way, we obtain an indication of prevalence which is as close as possible to the true state.

This year the numbers recorded show a rise. There was no obvious reason for this change.

Tuberculosis

These notifications are commented on elsewhere.

Shigella Infections/Salmonella Infections

The numbers notified are generally similar to those reported last year but most represent a gross under-reporting for this State.

Isolated and relatively small epidemics have occurred in several areas and members of this Division have gained valuable experience in recognition of certain factors which have contributed to these outbreaks. Correction of these factors has resulted in adequate and speedy control. Where groups use community facilities for preparing and cooking meals, and cleaning used utensils and equipment after the meals, members of those groups should be made continuously aware of the risks associated with faulty hygiene practices. School and church camps, after work functions, etc., lose much of their attraction if an epidemic of vomiting or diarrhoeal illness occurs during the outing or function.

Malaria

There was approximately the same number of notified cases this year, but there were three introduced cases which occurred in the Torres Strait Islands.

All mainland cases originated from abroad.

Meningitis

This condition continues to appear sporadically. No epidemics were reported. No cases were reported from institutions.

Poliomyelitis, Tetanus, Diptheria, Rubella

Notifications of these illnesses are very few. The preventative medical program conducted by general practitioners, hospitals and particularly by local authorities on a state wide basis is responsible for this very satisfactory state of affairs.

Vaccination/Immunisation Program

During this last twelve months, the distribution of vaccines for this purpose has been:—

Sabin vaccine	..	191 510 doses;
Rubella vaccine	..	28 413 doses.

In addition 22 217 doses of Measles vaccine have been distributed.

Measles is not a notifiable disease but the Commonwealth Department of Health provides this vaccine free to the States for distribution to those Medical practitioners and local authorities requesting it. The same conditions apply of course to the supply and distribution of Sabin and Rubella vaccine.

These figures for distribution correspond with previous years' dosages, except for Rubella distribution, where the doses distributed are increased and reflect the Brisbane City Council's third yearly campaign.

Hepatitis B

It can be noted that the total notifications for this condition have increased markedly when compared with the 1975–76 period. There is a growing awareness that many cases notified as Hepatitis A could well be those of Hepatitis B.

It is hoped that information from the Hepatitis Survey recently completed will alert medical practitioners to the prevalence of the disease and the prophylactic measures available to limit its occurrence and transmission.

Hansen's Disease

This disease continues to be only a minor problem in this State. There were four new cases notified in the last 12 month period, the same number as in 1975–76. All four were of the less serious Tuberculoid type. In addition, recurrence of active disease necessitating hospital admission occurred in 5 cases and there were 14 admissions to hospital for treatment of conditions associated with past infection with this disease.

Further developments this year have improved our capacity for surveillance of patients in Queensland. Dr D. A. Russell, a leprologist with extensive overseas experience, was appointed in a part time capacity in February last and his expertise is proving invaluable in both the examination and treatment of cases and in the re-organisation of the system by which patient surveillance is maintained. Close liaison with the Division of Aboriginal Health has continued and some training sessions with Aboriginal Health nurses undertaken in recognition and treatment of Hansen's Disease. This has already produced results in the field. Similar programmes are intended for the coming year.

A visit to the Cherbourg settlement was made in April and known cases in the area re-examined. Similar visits to other areas in the State are intended for the coming year. These efforts will update the current records and assist field health workers to offer proper treatment to patients with this disease in their care.

OTHER AREAS OF PUBLIC HEALTH ACTIVITY

Nursing Home/Private Hospital Inspections

Nursing Homes and Private Hospitals licensed by the State are inspected by the staff of this section on a regular basis.

These institutions function, from a State point of view, under legislation contained in the Nursing Home Regulations and the Private Hospital Regulations.

Vietnamese Refugees

Further groups of Vietnamese Refugees arrived in the State during the year.

These people were examined soon after arrival and investigation and treatment were arranged as necessary.

It is intended to follow up certain aspects of their health after they have moved into the community.

TABLE VI
NOTIFIABLE DISEASES (EXCLUSIVE OF VENEREAL DISEASES) 1st JULY, 1976 TO 30TH JUNE, 1977
METROPOLITAN AREA

Diseases	Months												Totals	Totals
	1976						1977						1976-77	1975-76
	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	April	May	June	1976-77	1975-76
Amoebiasis	10	2	2	1	..	..	..	..	6	1	2	4	28	49
Ancylostomiasis .. .. .	..	..	1	..	..	..	..	..	1	..	..	..	2	3
Anthrax .. .. .	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Brucellosis	1	..	1	1	..	..	..	1	1	..	..	..	5	..
Cholera .. .. .	..	..	..	..	..	..	..	..	1	..	..	..	1	1
Dengue .. .. .	..	..	..	..	..	..	..	..	1	..	..	..	..	2
Diarrhoea in Closed Institution .. .. .	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Diphtheria .. .. .	..	4	..	..	..	..	..	..	..	..	..	..	4	10
Encephalitis .. .. .	..	..	..	1	..	..	..	..	..	..	..	..	1	4
Epidemic Polyarthritis .. .. .	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Filariasis .. .. .	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Food Poisoning in Two or more Associated Cases .. .. .	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Hepatitis (Type A Infective)	3	5	11	8	8	4	3	7	15	7	8	9	88	111
Hepatitis (Type B Serum) .. .. .	..	1	..	1	..	..	..	1	3	2	2	2	12	3
Hydatid Disease .. .. .	..	..	..	..	..	..	..	..	1	..	..	..	1	..
Lead Poisoning .. .. .	..	..	1	..	..	..	..	..	..	..	..	..	1	..
Leprosy .. .. .	..	..	..	..	..	..	..	1	..	..	..	..	1	1
Leptospirosis .. .. .	..	..	..	..	..	..	..	..	1	..	1	..	2	..
Malaria	1	1	1	2	1	1	..	3	2	5	1	1	19	26
Melioidosis .. .. .	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Meningitis	2	1	..	..	3	7	3	..	9	1	3	..	29	15
Plague .. .. .	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Polomyelitis .. .. .	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Psittacosis (Ornithosis) .. .. .	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Puerperal Infection .. .. .	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Q. Fever .. .. .	..	..	..	2	..	1	3	3	3	6	..	46	64	45
Rubella	1	1	1	..	1	..	..	..	1	..	..	..	5	11
Salmonella Infections .. .. .	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Shigella Infections	9	2	1	4	2	3	2	4	6	4	4	12	17	6
Smallpox .. .. .	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Staphylococcal or Streptococcal Infection in a Nursery .. .. .	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Taeniasis .. .. .	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Tetanus .. .. .	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Trachoma .. .. .	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Tuberculosis (All Forms)	11	8	5	6	4	7	9	4	11	16	4	11	96	87
Typhoid .. .. .	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Typhus—	..	..	..	..	..	..	..	..	..	..	..	..	..	..
(a) Epidemic .. .. .	..	..	..	..	..	..	..	..	..	..	..	..	..	..
(b) Murine .. .. .	..	..	..	..	..	..	..	..	..	..	..	..	..	..
(c) Scrub .. .. .	..	..	..	..	..	..	..	..	..	..	..	..	..	..
(d) Tick .. .. .	..	..	..	..	..	1	..	..	..	..	..	..	1	..
Yellow Fever .. .. .	..	..	..	..	..	..	..	..	..	..	..	..	..	..
TOTALS	38	25	24	26	19	24	27	27	65	43	27	85	430	383

TABLE VII
NOTIFIABLE DISEASES (EXCLUSIVE OF VENEREAL DISEASES) 1st JULY, 1976 TO 30TH JUNE, 1977
EXTRA METROPOLITAN AREA

Diseases	Months												Totals	Totals
	1976						1977						1976-77	1975-76
	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	April	May	June	1976-77	1975-76
Amoebiasis .. .. .	..	1	..	..	1	..	1	..	..	..	1	1	5	5
Ancylostomiasis	1	10	..	..	..	1	..	..	..	2	1	..	15	180
Anthrax .. .. .	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Brucellosis .. .. .	..	1	..	..	..	1	..	..	1	..	..	1	4	4
Cholera .. .. .	..	..	..	..	..	..	..	1	1	..	..	..	2	..
Dengue .. .. .	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Diarrhoea in Closed Institution .. .. .	..	12	..	..	..	..	..	..	..	..	..	..	12	17
Diphtheria .. .. .	..	..	..	..	..	..	..	1	1	..	..	..	2	4
Encephalitis .. .. .	..	..	..	..	..	..	..	..	..	..	1	..	1	1
Epidemic Polyarthritis .. .. .	..	..	..	..	..	..	..	..	..	..	..	..	..	2
Filariasis .. .. .	..	..	..	..	..	..	..	..	..	..	..	1	1	..
Food Poisoning in Two or more Associated Cases .. .. .	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Hepatitis (Type A Infective)	17	11	27	19	18	15	16	19	32	14	8	21	217	326
Hepatitis (Type B Serum) .. .. .	..	1	..	1	1	..	..	1	2	1	1	6	14	1
Hydatid Disease .. .. .	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Lead Poisoning .. .. .	..	1	..	..	..	..	..	..	..	..	..	1	2	..
Leprosy .. .. .	..	..	..	..	..	..	..	..	..	..	..	..	..	3
Leptospirosis	4	1	1	..	1	1	..	1	2	3	5	1	20	37
Malaria	3	4	2	3	..	3	3	9	1	4	4	1	37	42
Melioidosis	1	..	..	..	..	..	..	..	..	..	1	2	4	..
Meningitis	1	..	..	..	..	3	2	..	7	1	..	2	16	22
Plague .. .. .	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Polomyelitis .. .. .	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Psittacosis (Ornithosis) .. .. .	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Puerperal Fever .. .. .	..	1	..	..	..	..	1	..	..	..	..	..	2	2
Q. Fever .. .. .	..	..	10	2	3	10	24	4	19	26	19	187	304	232
Rubella .. .. .	..	..	..	..	1	..	..	..	1	..	..	..	2	18
Salmonella Infections .. .. .	..	..	..	1	4	2	2	4	8	7	1	..	34	8
Shigella Infections	1	..	..	..	..	..	..	4	9	1	..	9	24	68
Smallpox .. .. .	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Staphylococcal or Streptococcal Infection in a Nursery .. .. .	..	..	..	1	..	..	..	1	..	..	..	..	2	..
Taeniasis .. .. .	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Tetanus .. .. .	..	..	..	..	..	..	..	1	1	1	..	..	3	1
Trachoma .. .. .	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Tuberculosis (All Forms)	18	11	13	13	7	18	11	9	9	9	13	9	140	131
Typhoid .. .. .	..	..	1	..	..	..	..	..	..	..	..	..	1	..
Typhus —	..	..	..	..	..	..	..	..	..	..	..	..	..	..
(a) Epidemic .. .. .	..	..	..	..	..	..	..	..	..	..	..	..	..	..
(b) Murine .. .. .	..	..	..	..	..	..	1	..	..	..	..	..	1	..
(c) Scrub .. .. .	..	..	..	..	..	..	..	..	..	..	..	..	..	..
(d) Tick .. .. .	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Yellow Fever .. .. .	..	..	..	..	..	..	..	..	..	..	..	..	..	..
TOTALS	46	55	54	40	36	54	61	55	94	69	55	248	867	1 119

SECTION OF ENTHETIC DISEASES

Although there has been an increase of 109 notifications of venereal disease for the year ended June 1976, the incidence rate per 100 000 has fallen slightly from 103·18 to 103·11.

Table VIII shows the number of notifications by sex distribution and age.

There is a further breakdown of age incidence in Table IX from which it is seen that the greatest incidence of this disease is again in the 15 to 24 year old decade. However, for this year the percentage of notifications has fallen from 64·31 per cent in 1975-76 to 54·02 per cent in 1976-77.

46·38 per cent of the notified syphilitic cases occur in this decade (46·71 per cent last financial year) and 57·41 per cent of notified gonorrhoea cases are in this age group (64·31 per cent last year).

This same table shows that the increase of 109 notifications is made up of an increase of 99 syphilitic notifications, an increase of 54 other forms and a decrease of 44 cases of gonorrhoea.

There was an almost equal incidence of syphilis amongst the sexes occurring 50·92 per cent in males and 49·08 per cent in females.

The attendances at both the male and female metropolitan clinics have increased, the female attendances by 73 and the male attendances by 472. The notifications from these two places has also increased by 36 and 78 respectively. Non specific urethritis continues to be the most frequently treated disease—increasing this year by 35 cases.

Notifications from private practitioners rose from 10·53 per cent last financial year to 12·06 per cent in 1976-77. Metropolitan practitioners were responsible for only 25·38 per cent of these notifications compared with 31·05 per cent last year. These figures are available from Table XIV.

Table XI records the number of cases occurring in varying country areas. These notifications constitute 46·20 per cent of all notifications which is a diminution from the 50·36 per cent reported from country areas in the last report.

The non professional continues to be the chief method of spread of the disease accounting for 83·54 per cent of the notifications and single persons constitute 74·04 per cent of the notified cases (Tables XII and XIII).

Contact Tracing

This service has now been operating for 15 months. Of 96 requests in the metropolitan area 5 are still pending. Of the remaining 91, 72 were located and 59 of these subsequent attended for examination. This is 81·9 per cent of those contacted or 64·8 per cent of the total number. From country areas 61·11 per cent have been successfully found and treated.

Homosexuality

There was an increase from 20 to 38 patients who admitted their infection was due to this practice. 68·42 per cent had gonorrhoea and 23·68 per cent had syphilis. Further details are available from Table XV.

Activity of the Section

Apart from an active contact tracing programme, this section has embarked on a widespread awareness programme aimed at the general public as well as the nursing and medical profession. As a result it is anticipated that there could be an increase in the figures produced in this portion of the report in the next financial year. This will not necessarily mean an increase in venereal disease in the community but will be a reflection of more accurate notification of cases seen.

TABLE VIII
NOTIFIED VENEREAL DISEASES 1959-60 TO 1976-77

Year	Notifications				Age Distribution—Per Cent.			
	M	F	Total	Rate/100 000	0-14	15-19	20-24	25+
1959-60	872	149	1 021	70·5	1·0	24·1	28·5	47·3
1960-61	1 230	206	1 436	97·8	1·0	36·2	24·3	39·4
1961-62	1 272	253	1 525	99·8	0·7	35·9	28·3	35·1
1962-63	1 155	318	1 473	96·5	0·7	27·1	33·4	38·8
1963-64	1 038	284	1 322	84·0	1·1	29·0	31·9	38·0
1964-65	1 173	367	1 540	96·5	0·5	28·9	30·5	40·1
1965-66	1 235	417	1 652	101·2	0·7	23·0	34·4	41·9
1966-67	1 221	445	1 666	100·3	1·2	26·1	35·2	37·5
1967-68	1 163	491	1 654	97·2	0·8	23·9	34·5	40·8
1968-69	1 422	611	2 033	116·1	1·1	23·8	35·7	39·4
1969-70	1 403	547	1 950	110·2	1·2	25·3	33·1	40·4
1970-71	1 441	439	1 880	103·3	0·9	26·5	32·8	39·8
1971-72	1 575	545	2 120	116·0	0·9	23·8	35·4	39·9
1972-73	1 806	719	2 525	138·2	1·9	27·2	33·9	36·9
1973-74	1 657	898	2 555	131·3	2·0	25·0	30·1	42·8
1974-75	1 705	872	2 577	128·7	1·1	28·9	32·5	37·5
1975-76	1 391	688	2 079	103·18	1·9	25·8	34·5	37·6
1976-77	1 457	731	2 188	103·11	2·5	24·6	30·2	42·7

TABLE IX
SHOWING AGE GROUPS OF NOTIFIED CASES OF SYPHILIS AND GONORRHOEA

	SYPHILIS			GONORRHOEA			OTHER FORMS			Com- bined Total
	Males	Females	Total	Males	Females	Total	Males	Females	Total	
Under 1 year	3	2	5	3	1	4	1	..	1	10
1- 4 years	3	1	4	..	..	..	..	..	..	4
5- 9 years	13	4	17	2	2	4	1	..	1	22
10-14 years	3	7	10	3	7	10	2	..	2	22
15-19 years	39	93	132	193	176	369	30	6	36	537
20-24 years	78	66	144	344	124	468	40	6	46	658
25-29 years	38	45	83	237	52	289	21	2	23	395
30-34 years	39	27	66	115	24	139	11	2	13	218
35-39 years	22	15	37	59	13	72	6	..	6	115
40-44 years	16	10	26	24	8	32	1	1	2	60
45-49 years	10	7	17	15	4	19	2	..	2	38
50-54 years	7	5	12	10	..	10	..	..	..	22
55-59 years	7	1	8	6	2	8	1	1	2	18
60-64 years	3	1	4	5	2	7	..	..	..	11
65 years and over	12	2	14	4	..	4	..	..	..	18
Not Stated	10	6	16	18	5	23	..	1	1	40
TOTALS	303	292	595	1 038	420	1 458	116	19	135	2 188

TABLE X
NOTIFIED VENEREAL DISEASES IN QUEENSLAND, 1976-77

						Metropolitan		Outside Centres		Whole State		Total
						Males	Females	Males	Females	Males	Females	
Gonorrhoea—												
Unspecified	..	..	..	..	..	..	10	..	..	..	10	10
Acute	..	..	..	..	..	670	124	354	76	1 024	200	1 224
Sub-acute	..	..	..	..	..	3	169	6	33	9	202	211
Chronic	..	..	..	..	..	1	1	1	3	2	4	6
Ophthalmia	..	..	..	..	..	..	..	3	1	3	1	4
Vulvo-vaginitis	..	..	..	..	..	..	1	..	2	..	3	3
						674	305	364	115	1 038	420	1 458
Syphilis—												
Unspecified	..	..	..	..	..	..	6	..	..	..	6	6
Primary	..	..	..	..	..	27	15	128	103	155	118	273
Secondary	..	..	..	..	..	15	7	53	69	68	76	144
Tertiary	..	..	..	..	..	2	..	1	..	3	..	3
Latent	..	..	..	..	..	19	13	55	77	74	90	164
Neuro	..	..	..	..	..	..	..	..	..	..	..	..
Heredo (Congenital)	..	..	..	..	..	..	..	3	2	3	2	5
						63	41	240	251	303	292	595
Other Forms—												
Soft Sores	..	..	..	..	..	9	..	5	1	14	1	15
Venereal Warts	..	..	..	..	..	83	2	15	13	98	15	113
Ulcerative Granuloma	..	..	..	..	..	..	..	4	3	4	3	7
						92	2	24	17	116	19	135
						829	348	628	383	1 457	731	2 188
						1 177		1 011		2 188		2 188

TABLE XI
CENTRES OF NOTIFICATIONS OF VENEREAL DISEASE
OUTSIDE METROPOLITANS

Centre	Males	Females	Total
Amberley	3	1	4
Atherton	4	2	6
Babinda	6	2	8
Bamaga	8	7	15
Blackall	1	..	1
Blackwater	4	1	5
Bundaberg	6	4	10
Burketown	2	1	3
Burleigh Heads	1	..	1
Cairns	44	21	65
Charleville	1	..	1
Charters Towers	1	2	3
Cherbourg	1	..	1
Cloncurry	12	2	14
Coen	5	2	7
Doomadgee	52	59	111
Gin Gin	1	..	1
Gordonvale	16	2	18
Gympie	1	..	1
Hughenden	2	..	2
Ingham	3	..	3
Ipswich	10	5	15
Kallangur	1	..	1
Kingston .. .. .	..	1	1
Kowanyama	33	20	53
Lockhart River	35	27	62
Longreach	3	4	7
Mackay	3	4	7
Maryborough	2	..	2
Miami	1	1	2
Mossman	4	7	11
Mount Isa	38	13	51
Mount Morgan	2	2	4
Murgon	1	..	1
Nanango	1	..	1
Palm Island	25	6	31
Redcliffe	6	4	10
Rockhampton	16	14	30
Roma .. .. .	..	1	1
Southport	6	3	9
Stanthorpe	1	..	1
Surfers Paradise .. .. .	..	3	3
Taroom	1	..	1
Tewantin	1	..	1
Thursday Island	78	63	141
Toowoomba	1	1	2
Townsville	116	19	135
Tully	3	4	7
Warwick	2	..	2
Weipa	29	36	65
Yarrabah	35	39	74
TOTALS	628	383	1 011

TABLE XII ALLEGED SOURCE OF INFECTION					
Professional	..	..	..	..	55
Non-professional	..	..	..	..	1 828
Husband	..	..	..	..	12
Wife	..	..	..	..	13
Mother	..	..	..	..	19
Father	..	..	..	..	2
Not Stated	..	..	..	..	259
Total	..	..	..	..	2 188

TABLE XIII MARITAL STATUS OF PATIENTS					
		Males	Females		Total
Single	.. .. .	1 139	481		1 620
Married	.. .. .	210	170		380
Separated	.. .. .	39	41		80
Widowed	.. .. .	10	19		29
Divorced	.. .. .	16	8		24
Not Stated	.. .. .	43	12		55
Totals	.. .. .	1 457	731		2 188

TABLE XIV SHOWING SOURCES OF NOTIFICATIONS					
		Males	Females		Total
Private Doctors—					
Brisbane	.. .. .	48	19		67
Outside Centres	.. .. .	153	44		197
Totals	.. .. .	201	63		264
Clinics—					
Brisbane	.. .. .	751	278		1 029
Outside Centres	.. .. .	74	21		95
Totals	.. .. .	825	299		1 124
Hospitals—					
Brisbane	.. .. .	30	51		81
Outside Centres	.. .. .	401	318		719
Totals	.. .. .	431	369		800
Totals All Sources		1 457	731		2 188
		2 188			

TABLE XV
HOMOSEXUAL

—	Gonorrhoea	Syphilis	Other Forms	Total
Age				
15-19	5	..	..	5
20-24	8	1	3	12
25-29	7	2	..	9
30-34	3	3	..	6
35-39	3	3	..	6
	26	9	3	38

DRUGS AND POISONS SECTION

Drug addiction and its associated problems continued to be of major importance for this Section. It was necessary, during the early part of 1977, to re-organise the treatment of drug addicts and to institute a treatment programme involving the use of methadone syrup. This arose because of the change of benefits approved by the Australian Department of Health for the prescribing of methadone. Pharmaceutical Benefits for methadone were restricted to treatment for the last stages of malignant neoplasia. This meant that prescriptions written for drug addicts by the clinic, then at Mary Street, and by those doctors approved to treat drug addicts, would not attract a benefit and, if they were dispensed, the pharmacist would charge a dispensing fee for a private prescription. As most addicts were receiving treatment in tablet or intravenous form, these would all be required to pay the higher dispensing fee. As most, if not all, the addicts under this form of treatment could not afford these fees it became necessary to take advantage of the offer by the Australian Department of Health to supply methadone syrup free for the treatment of drug addiction.

This meant that the whole treatment scheme had to be re-organised throughout Queensland. This has been done and is now in operation with treatment centres set up at public hospitals and the Drug Dependency Clinic at PFC House, Herschel Street, Brisbane. In addition to this, 53 pharmacists have been authorised to supervise the treatment of 182 drug addicts. The drug addict attends these pharmacies usually on a daily basis, is given his prescribed dose of methadone syrup, and consumes it in the presence of the pharmacist.

In order to ensure that the method of treatment was uniform throughout the State and that all medical practitioners who were authorised to treat addicts were familiar with all aspects of the methadone programme, a tour of Queensland was undertaken by Dr. Rogers, Senior Inspector Hassett, and Inspector Waldock. Centres from the Atherton Tableland to the Gold Coast and west to Toowoomba were visited. Gatherings of medical practitioners and pharmacists were addressed; the scheme explained in detail; questions answered and problems discussed. The tour has proved to be very worthwhile and of great assistance from an administrative and a practical point of view.

The following is a table of addicts under treatment as at 30th June, 1977:—

TABLE XVI

Number	Drug	Where Treated	
		City	Country
153	Methadone (syrup)	18 pharmacists	35 pharmacists
24	Methadone (intravenous)	2 public hospitals	9 public hospitals

This year also saw the first intake of diplomates from the Queensland Institute of Technology. These young people have graduated after completing a two years full time course in Health Surveying and face, after appointment, to the Department, a further two years of practical experience before being appointed as Health Inspectors, Division II. This time was considered necessary as each appointee must spend eight months in each Section before he can be considered to be competent enough, from a practical point of view, to assume the full duties and responsibilities of a health surveyor in the field. The standard produced by the Institute is encouraging and the appointment of a female technical assistant breaks new ground in the health inspection area in this department.

Work has continued on all other aspects of the supervision of the sale and use etc. of drugs and poisons in Queensland. Routine inspections of pharmacies, licensed poisons dealers, wholesale sellers of restricted and dangerous drugs were carried out. An inspector from the National Biological Standards Laboratotry again visited Brisbane and carried out inspections of manufacturers, packers and distributors of therapeutic goods in company with inspectors from this Section. It is hoped, in the near future to submit regulations to control the manufacture and distribution of therapeutic goods. This industry is rapidly increasing and the application of the Code of Good Manufacturing Practice is becoming a necessity. A degree of control can be exercised under certain sections of the Health Act, Food and Drug Regulations and the Poisons Regulations but not to the same degree of efficiency or effectiveness as the set of regulations before mentioned.

Other duties performed by officers of this section were—the checking of the packaging and labelling of poisons of all descriptions; the monitoring of the movements of drugs of dependence; investigating forged prescriptions and complaints from pharmacists in the drug area; the preparation of authorities under sub regulation D2.15 of the Poisons Regulations of 1973 to authorise the obtaining and use of certain drugs and poisons.

The Chief Inspector during the year attended meetings of the—

- Poisons Schedules Standing Committee of the National Health and Medical Research Council;
- National Therapeutic Good Committee;
- Standards Association of Australia; and the
- Health Working Party on Drugs of Dependence.

Towards the middle of 1976, because of the cost and inconvenience it was causing his department, the Commissioner for Police approached the Honourable the Minister for Health, seeking assistance in disposing of drugs and articles seized under section 130 of the Health Act. The Minister directed that these drugs and articles which had been forfeited to the Crown under section 144 (2) of the Health Act, be disposed of—

- (a) in Brisbane, by the Government Analyst;
- (b) in country centres, by State Health Inspectors responsible for the District,

and the necessary certification of destruction was to be issued on each occasion.

Seizures and destructions took place at Cairns, Townsville, Mackay, Rockhampton, Bundaberg, Toowoomba and Southport.

The total of drugs destroyed was—

Cannabis leaf etc.	..	397 lots
Cannabis seeds	.. ..	117 lots
Cannabis plants	..	129 seedlings
Pipes	.. ..	104
Cigarettes	.. ..	44
Syringes etc.	.. ..	61
Hashish Caps.	.. ..	4 capsules
Hashish oil	.. ..	10 capsules
Hashish resin	.. ..	3 lots
Buddha sticks	.. ..	21
Heroin	.. ..	545 grams and 4 capsules
Morph. sulph. and atropine		1 amp.
Barbituric acid	.. ..	28 tabs.
Tetrahydrocannabinol	..	3 capsules

TABLE XVII
PROSECUTIONS

Place	Breach	Fine	Costs	Analysts Fee	Professional Costs
Beenleigh	Unauthorised possession of restricted drugs (5 charges)	\$30.00 on each charge Total \$150.00	\$12.25 on each charge Total \$61.25	\$40.00 on 2 charges Total \$80.00	\$10.00 on each charge Total \$50.00
Brisbane	Unauthorised possession of restricted drugs	\$25.00	\$12.25	..	\$15.00
Brisbane	Unauthorised sale of a restricted drug ..	\$25.00	\$12.25	..	\$15.00
Warwick	Altering a prescription	\$30.00	\$12.25	..	..
Warwick	Uttering a prescription	\$30.00	\$12.25	..	..
Innisfail	Unauthorised sale of a Schedule 2 poison ..	\$40.00	\$14.25	..	..
TOTAL	.. .. .	\$300.00	\$124.50	\$80.00	\$80.00

During the year 533 samples of drugs of a miscellaneous nature were submitted for chemical analysis. They included drugs for therapeutic use, cosmetics, colouring pencils and domestic substances.

The Laboratory of Microbiology and Pathology also assisted in bacteriological examination of antiseptics and disinfectants.

SECTION OF FOOD SUPERVISION

The activities of this section are devoted to the maintenance of a safe and wholesome food supply, truthfully described, and presented in a manner affording the utmost protection against contamination of any kind. Food is a product of which every person is a consumer and thus the protection of the people's food supply is a basic but extremely important necessity of any public health structure. The food section is directly engaged in the formulation of food quality, labelling and packaging standards and of appropriate legislation to enable the enforcement of these standards. Its officers carry out the inspection and sampling of foods to determine compliance with prescribed standards, to detect and prevent the sale of unadulterated or falsely described food and they assess foods damaged in fires, floods, transport incidents or by other causes. Reports of cases of alleged food poisoning are also investigated. Surveys are carried out to determine the microbiological status of foods and the degree of contamination with substances which could be harmful if present in excess of prescribed levels.

Milk and Milk Products

Chemical and bacteriological samples of milk and milk products have been regularly obtained from all processing plants and from other sources of public supply in Queensland and inspections of factories have been carried out.

Two persons were prosecuted for selling milk adulterated with water. Total fines of \$65 with costs of \$108.50 were imposed. One company was fined \$400 with costs of \$54.25 for selling Whipping Cream deficient in milk fat. Two prosecutions against companies for the pre-dating of pasteurised milk brought total fines of \$60 with \$104.50 costs.

A continuing state wide investigation is under way into the contamination of milk with excessive amounts of iodine caused by the over enthusiastic use of iodine based dairy sanitisers. This joint programme by the Department of Primary Industries and the State Department of Health is designed to educate milk producers and milk processors to the effect that the correct use of such sanitising agents is essential. If the excessive contamination of milk continues, it will be necessary to legislate to control the situation by setting a maximum permissible residue level of iodine in milk. Milk containing more than the permitted residue will be deemed to be adulterated.

Meat

Seventy-six butchers were prosecuted for the sale of adulterated meat. Total fines of \$5,650 and costs of \$4,150.51 were imposed on these butchers.

Of these offences, 42 were in respect of the addition of a chemical preservative to minced meat which is not allowed; 17 were in respect of the addition of an excessive amount of preservative to sausages and sausage meat; 5 in respect of excess preservative and insufficient meat in sausages and sausage meat; 8 in respect of total meat deficiency in sausages and sausage meat; 3 in respect of an excessive amount of fat and of preservative in sausages and sausage meat and one butcher was prosecuted for artificially colouring meat.

Bread, Flour, Pies

Bread, flour and meat pie sampling has been carried out throughout the State and as a result of these activities and public complaint seven bakers were prosecuted. Total fines of \$220 and costs of \$211.75 were imposed. Two bakers were prosecuted for selling milk bread which did not conform to the prescribed standard; two for unsatisfactory labelling of bread; one for selling bread containing a cigarette butt; two for smoking cigarettes whilst preparing food for sale in bake-houses.

Where deficiencies were found in the total meat content of meat pies, pie manufacturers co-operated willingly in bringing their products into conformity with the prescribed standard.

Liquor

As the result of the testing of liquor at premises licenced under the Liquor Act, ten licensees were prosecuted for the sale of adulterated spirits. Total fines of \$664 and costs of \$629.50 were imposed. Eight prosecutions were in respect of adulterated rum, one for adulterated brandy and one for adulterated gin. 143 litres of adulterated rum were forfeited to the Crown for disposal.

Distributors of spirits were required to remove from sale in Queensland eight brands of whisky and one of brandy which did not conform to this State's prescribed standards for these spirits.

A survey of Imported and Australian Wines revealed that, in general, they conformed with prescribed standards.

Fruit Juices, Fruit Drinks, Cordials, Soft Drinks

Surveillance of these types of products has been maintained throughout the year. Instructions given to manufacturers to rectify minor quality and labelling deficiencies have been met. Resampling of products not entirely satisfactory has been carried out to ensure compliance.

Seafoods

During the year, Health Department Inspectors operating at and from the Brisbane Fish Markets have condemned as unfit for human consumption and destroyed 35.5 tonnes of assorted fish and other seafoods together with 4 530 crabs and 120 dozen oysters whilst District State Health Inspectors in areas outside of Brisbane similarly dealt with 2 tonnes 69 kilograms of assorted seafoods.

Sampling of imported cooked and peeled prawns has revealed a high degree of microbial contamination in consignments from one particular country. These prawns and shrimps are very small in size and are used mainly in the preparation of seafood cocktails and oriental type foods. Action was taken to prevent the distribution of 23 tonnes 560 kilograms of these imported prawns.

The co-operation of the Director and Officers of the Queensland Fisheries Services of the Department of Aboriginal and Islanders Advancement and Fisheries in the submission of fish and crabs, which the Officers caught in the Albert and Logan Rivers systems, and of the Director and Officers of the Boating and Fisheries Patrol of the Department of Harbours

and Marine in submitting oysters, which the Officers obtained from areas near the mouth of this river system, for examination for vibrio cholerae, was greatly appreciated.

Unsound Food

In the course of their activities throughout the State, Officers have certified as unfit for human consumption and have supervised the destruction of 15 tonnes 150 kilograms by weight plus 2 052 litres by volume plus 492 228 packages of unspecified weight of assorted foods.

Complaints

Complaints received concerning food ranged from the presence of foreign objects to alleged food poisoning. All complaints were promptly and fully investigated and appropriate measures were taken where default was substantiated or improvement in methods warranted.

Wherever possible, cases of alleged food poisoning were investigated by a Health Inspector in company with an Officer of the Laboratory of Microbiology and Pathology.

Food Labelling

The label of every packaged food sampled during the year has been checked to gauge compliance with prescribed labelling requirements and appropriate action taken to have faults rectified. Many food packers have availed themselves of the service offered by this section in checking proposed labels submitted in draft form to ensure compliance before printing arrangements are made by the Packer.

The name and business address of the manufacturer or importer, or vendor, or packer of a food must appear on the label. The address only may be deleted where the name is a registered business or company name in the State of Queensland. A campaign is under way by this section to ensure that this information is provided on the labels of all packaged food. This is necessary because of a growing trend not to provide these details on food labels.

Food Sampling

Details of the many legal samples obtained by Inspectors policing food standards are given in the reports on the Government Chemical Laboratory and the Laboratory of Microbiology and Pathology. In addition to these legal samples, 2 944 samples were submitted for chemical analysis

and 620 for bacteriological examination as routine checks on composition, quality control, suitability for human consumption and labelling requirements.

Comprehensive sampling surveys were again carried out for the National Health and Medical Research Council as part of an Australia wide assessment of pesticide residues in food, and to assess the microbiological status of various foods.

Local Authority Supervision

Officers of the Food Section carry out periodic surveys in Local Authority areas to gauge the degree of enforcement by Council Health Surveyors of the provisions of food hygiene regulations which prescribe conditions acceptable for the manufacture, distribution, preparation, handling and serving of food for sale.

Commencing with the promulgation of revised Food Hygiene Regulations in 1976, comprehensive surveys will now be conducted on a three yearly basis in place of haphazard annual surveys of minor significance. It is considered that this new approach will give a better and fairer picture of the amount of attention being given by Council Health Surveyors to the important field of the surveillance of food hygiene standards.

Present indications are that, whilst many Local Authorities and their Health Surveyors are making every effort to enforce the provisions of the Food Hygiene Regulations of 1976, there are instances where the significance of continued vigilance is either not appreciated or is underestimated.

Uniform Food Standards

The Chief Inspector of Foods attended the two meetings of the Food Law Revision Task Force held during the year in Canberra. This task force is part of the Joint Commonwealth State Territory Working Party on Model Food Law which is required to draw up model food legislation suitable for application throughout Australia. The first Draft Australian Model Food Act is now being prepared and is based on the recommendations made by the Food Law Revision Task Force.

The Chief Inspector of Foods is also Queensland's representative on a new body formed by the National Health and Medical Research Council to examine all legislative aspects of food standards, including those involved in acceptance of Codex Alimentarius Standards. This new body is called The State and Territory Food Legislation Working Party.

SECTION OF ENVIRONMENTAL SANITATION

The introductory paragraph of last year's report of this Section stated the responsibility of the Director-General of Health and Medical Services for safeguarding the health of the people of this State. The duties of this office were dramatically highlighted by the action that followed the report of a case of cholera in Queensland.

This unique case of a natural occurrence of classical cholera recorded at Beenleigh in February, 1977, has changed the accepted values of the protection our affluent community apparently enjoyed from this menace. We now know that cholera can happen here.

Officers of the Division of Public Health Supervision staffed the field units of the task force formed to carry out the daily activity of tracing the source of this case of cholera.

The investigation established the full identity of the micro-organism, where same was living but not how the organism came to be in the locality and means of survival. The solution to the puzzle of this episode may not be clearly elucidated but efforts are continuing and will be sustained to find the answers.

Every District Health Inspector was given a complete appreciation of the results and problems of the investigation of this incidence of cholera and subsequently surveys were made of all public water supplies throughout Queensland.

The lesson to be learnt from the cholera incident is that health authorities must not forget what are really basic principles. Where a public water supply comes from an area which may be contaminated by sewage, treatment must always be adequate. This does not imply that evidence of contamination from sewage was found—in fact as already has been said, the source was not found. The incident was a forcible reminder of the necessity not to relax in water treatment and sewage disposal.

The two basic essentials for a safe drinking supply are the provision of adequate means of filtration and effective chlorination.

Water Supplies

7 075 bacteriological water samples collected from reticulated water supplies were submitted by Local Authorities and examined in the Laboratory of Microbiology and Pathology of his Department. This total of water samples from public supplies is an increase of 2 847 samples over the number examined the previous financial year.

Table XVIII shows the results of the examinations:—

TABLE XVIII		
Source of Samples	Number of Samples Examined	Percentage of samples failing to meet World Health Organization bacteriological standards for drinking water
Centres of population in excess of 10,000 ..	1 763	4.76
Centres of population below 10,000 ..	5 312	9.39

In every case when results were received by this Section of the examination of samples from reticulated supplies showing contamination or pollution, an officer communicated directly by telephone with the responsible officer of the Local

Authority. In this manner action is initiated forthwith to ascertain the possible cause and to correct same. Recheck samples are subsequently forwarded to verify by results of the examination, the correctness of the remedy.

This Section now requires that the information submitted with water samples for bacteriological examination states the actual residual chlorine present in the treatment supply. The inclusion of this data promotes a closer understanding by the responsible officer of the Local Authority of the value of this form of water treatment.

The total number of water samples handled by this Section during the financial year from all sources was 9 144. This total includes 823 samples obtained during the investigation of the case of cholera.

Nightsoil and Refuse Collection and Disposal

Inspectorial staff of this Division have carried out environmental surveys in Local Authorities throughout the State and reports recommending action for the proper and correct disposal of nightsoil and refuse have been brought to the notice of the relevant Authorities for attention.

The imposition by the Director-General of conditions on the authorisation of the use of land for the disposal of refuse has improved the standard of disposal and increased the knowledge of the Local Authority officers of the detailed practical requirements of this task.

Direct Areas of Responsibility

The old style Queensland home built on "stilts" and constructed of hardwood has a life in excess of eighty years. These large old homes have become popular because of the high cost of building. But the homes are a potential hazard to children as item point (b) of Table XIX illustrates by the 74.5 per cent. failure rate in the tests of samples of paint scrapings.

The use of heavily leaded paints was the normal practice prior to the early thirties and the hazard that now exists in deteriorated layers of paint with a dangerous residual of lead is being recognised by these home owners.

TABLE XIX

Type of Sample	Number Examined	Number Failing to to Meet Standard
-----	-----	-----
Toys	20	4
Glazed pottery	14	..
Paint—		
(a) Liquid	1	0
(b) Scrapings	106	79

Aboriginal Health

This Section continues to provide the expert services of health inspectors to make detailed enviromental surveys of Aboriginal communities, missions and reserves. The officers work in co-operation with the management and Aboriginal Councils endeavouring to improve every facet of the immediate environment.

Officers of this Section also arranged and conducted training courses for selected staff of Aboriginal communities and missions whose task is the practical application and supervision of the basic principles of hygiene.

Malaria Control

The annual malarial control spray round of the Torres Strait region was again organised and supervised by a team of inspectors of the Division of Public Health Supervision. Every premises on all inhabited islands were sprayed with a residual insecticide immediately prior to the monsoon period. This action affords a measure of protection to the inhabitants against the insect vectors of disease.

Two inspectors joined a team of environmental experts to investigate and control a report of a notification of malaria at the Bamaga Aboriginal Community. The speedy application of control measures limited the number of cases to the initial report.

DIVISION OF TUBERCULOSIS

Director: E. W. ABRAHAMS, M.D.(Melb.), F.R.C.P.(Lond.), F.R.A.C.P.

Assistant-Director: W. A. OLIVER, E.D., M.B., B.S., M.R.C.P.(Lond.), M.R.A.C.P.

Chest Physician, Toowoomba: E. ROBINSON, M.B., Ch.B., D.P.H., T.D.D.

Chest Physician, Rockhampton: D. W. KANE, M.B., B.S., F.R.A.C.P.

Chest Physician, Townsville: A. J. MATTHIESSON, M.B., B.S., F.R.A.C.P.

Chest Physician, Cairns: A. M. PATEL, M.B., B.S., F.R.C.P.(Edin.), M.R.A.C.P., D.E.C.T.

STAFF

There has been no change in senior medical staff during this year. Dr. T. Konstantinos has resigned from the staff of the Brisbane Chest Clinic and has not yet been replaced.

GENERAL

TABLES XX-XXVI

During this year, 1st July, 1976—30th June, 1977, there were 205 new cases of tuberculosis notified and an additional 11 cases relapsed, a total of 216, of whom 29 were non pulmonary and 17 were atypical mycobacterial infections.

As shown in Table XXIV this figure has not varied greatly since 1971-1972.

Tuberculosis now occurs predominately in the older age groups as is shown in Table XXIII. The small number of cases in the under 35 section of the community, commented upon last year, is still a feature of the age distribution of notified cases.

Many persons in this age group were vaccinated with B.C.G. vaccine as school leavers, a probable factor in the reduced number of cases, as is the reduced number of infectious individuals in the community as compared with the period prior to the discovery of anti-tuberculous drugs.

Since the early 1950's when these drugs came into widespread use, persons suffering from tuberculosis rarely infect others after the discovery of the nature of their illness, as, with drug treatment, the number of organisms excreted, rapidly falls. In addition active case finding brings some cases under treatment before they are aware of being ill, and so limits the period when they are capable of infecting others.

The majority of cases now seen are, as far as can be established, the result of infection early in life, latent disease being activated in aging individuals, or in persons whose ability to contain infection has been reduced by other factors—virus infections, stress and treatment of other ailments with immuno-suppressive drugs being important in this regard.

For these reasons, it is still necessary to continue control measures and further reduce infection by active case finding in the older age groups of the population.

TREATMENT

Until the recent changes in medical insurance in Australia, tuberculosis was specifically excluded from medical benefits. This was because the long period of hospital care involved was thought to make the costs unacceptably high to insurance schemes, so public hospital facilities, free of all charges for hospital, medical care and for drugs was provided under the Commonwealth State Tuberculosis arrangement, cases being treated by salaried medical and other staff.

As the period in hospital has steadily been reduced, and some cases can be managed entirely without hospital admission, medical benefits are now available and it is anticipated that an increasing number of cases will be treated privately.

It is hoped that existing cordial relationships with private practitioners will be maintained, so that the public health aspects of case control can be effectively maintained.

Debate as to the duration of drug treatment continues, but recent recommendations by the National Tuberculosis Association of the U.S.A., and the National Tuberculosis Advisory Council of Australia both recommend caution in the use of treatment regimes of less than eighteen months duration.

MYCOBACTERIAL RESEARCH UNIT

As a result of the withdrawal of Commonwealth funding for tuberculosis, this unit will be disbanded on 31st December, 1977.

During the year under report and the six months' of 1977 remaining, the work is aimed at completing investigations in hand into the epidemiology of organisms of the *Mycobacterium avium*, *intracellulare*, *scrofulaceum* complex, (M.A.I.S.) There are—

- (1) The clinical classification of patients suffering from infection with these organisms, both pulmonary and extrapulmonary;
- (2) The repetitive examination of sputum from patients with pulmonary disease of various types to determine the significance of sputum isolates of M.A.I.S. organisms;
- (3) Annual experiments—
 - (a) into investigating a strain of M.A.I.S. organisms (serotype Boone) pathogenic for mice;
 - (b) The effect of Isoniazid administration on growth of M.A.I.S. organisms;
 - (c) An attempt to reproduce, in animals, the fluctuation of tuberculin hypersensitivity obscured in children;
- (4) Isolation of M.A.I.S. organisms from soil.

A technique for isolation of M.A.I.S. organisms has been developed which considerably accelerates the work.

The recovery of M.A.I.S. organisms from soil, house dust and water, suggests that these organisms may reach children in any of these forms and so produce the widespread high tuberculin reactor rates found in Queensland.

LUNG CANCER

(TABLES XXVII & XXVIII)

Thirty-two new cases of lung cancer were seen at Brisbane Chest Clinic, and 84 were found by mass radiography in 1976 calendar year. This compares with 5 cases of tuberculosis.

As mentioned last year, B.C.G. vaccine is now being widely used as a stimulant to the immune responses of persons suffering from this disease, and improved survival rates are claimed where the vaccine is introduced when owing to surgery, radiotherapy or the use of cytotoxic drugs, the tumour mass is small. A number of cases are being treated in this way, but no idea of the effectiveness is as yet available.

One of the most ironic features of the preventive medicine scene in the western world today is the enthusiasm with which some individuals campaign for changes in industrial processes, and air pollution, for example, while continuing to pollute their own personal air intake by smoking.

The general provision of better facilities for non smokers in transport, restaurants and similar establishments is a most heartening sign of a gradual change in community attitudes: unfortunately it will be many years before these reforms cause a significant change in the lung cancer load.

COUNTRY CLINICS

Activity in the various country centres has shown some changes over recent years.

At Toowoomba, a gradual reduction in demand has made it possible for the Chest Physician to now share his time with Geriatrics and Community Health Care.

At Rockhampton, similarly, a drop in demand has permitted the position to become part-time, and Dr. Kane now works on a sessional basis.

At Townsville, on the other hand, there is gradually increasing activity: Chest surgery is now available locally, and all aspects of chest medicine are becoming increasingly needed.

Activity in the Cairns district is maintained at much the usual levels. The large aboriginal population in North Queensland requires continuing close supervision for tuberculosis and other chest disease is also common in this section of the community.

ADULT TUBERCULIN TESTING

This was completed, as planned at its inception four years ago, at the end of June, 1977.

The success of this scheme is a gratifying one and the co-operation of the Queensland population has been remarkable. If, as anticipated, a majority of new cases of tuberculosis arise in the section of the population now identified as having strongly positive tuberculin reactions; and if they can be kept under periodic X-ray surveillance, a very considerable innovation in tuberculosis control will have been made.

MIGRANTS

South East Asia refugees arriving since August, 1975, now total 542 of whom most are children. From this population 3 had active tuberculosis and 28 children are considered to require chemoprophylaxis as a result of fairly recent infection. As it seems probable that further Asian migrant contacts will occur, surveillance of these persons is needed and the Australian medical profession needs to be aware of the possibility of tuberculosis occurring among them.

VIETNAMESE MIGRANTS

Two hundred and five of these migrants have arrived since September 1976, in 4 groups. A 22 year old male was admitted to Hospital with active disease.

Fifteen children were commenced on chemoprophylaxis as they were strongly tuberculin positive.

MASS X-RAY SURVEYS

(TABLES XXII-XXVIII-XXXIII)

During the year 1976-1977, the following electorates were proclaimed for compulsory mass radiography and visited by caravan mounted X-ray equipment:—

Metropolitan Vans

Electorates of Mount Gravatt, Salisbury, Archerfield, Wolston, Sherwood, Yeronga, Greenslopes, Chatsworth, Bulimba, Kurilpa, South Brisbane, and Brisbane (South of the River).

Country Vans

Warrego (Part), Gregory (Part), Roma (Part), Auburn (Part), Condamine, Balonne, Carnarvon, Warwick, Cunningham, Toowoomba North, Toowoomba South, Somerset (Part), Callide (Part), Mirani, Whitsunday (Part), Mackay.

Remote Areas Unit

All Torres Strait Islands, including Thursday Island and Bamaga.

This will conclude the compulsory mass X-ray campaign commenced in 1959.

Tables XXIX and XXX show the number of cases discovered during the year and Table XXXIII the total numbers since the inception of the campaign up to the end of December, 1976.

As compulsory mass radiography was stopped at the end of June, 1977, some comments on this campaign are probably in order.

The overall success of the undertaking can be seen from the figures in the two tables mentioned.

It is not possible to say how many new cases of disease have been prevented from occurring by the early discovery of the 2 272 cases found, nor how many of them might have died undiagnosed. It can be said that at best one-third of them, as a result of early diagnosis, made a good recovery with little lung damage, and that almost all found were made non infectious with treatment, and resumed a normal life style.

The necessity for compulsion is also clearly seen in Table XXXII, from 6 to 8 times the incidence of disease occurred in people who needed to be reminded of their obligations at least once in all, 208 active cases of tuberculosis being found in this section of the population.

The efforts of many individuals, ranging from drivers to radiologists are gratefully acknowledged.

TUBERCULIN TESTING AND B.C.G. VACCINATION

(TABLES XXXV, XXXVI & XXXVII)

A total of 207 High Schools were visited during the year to carry out the Tuberculin Testing and give B.C.G. vaccinations in the metropolitan and country areas. The method now used for both procedures is by the Heaf Multiple Puncture apparatus and supervised by Sister J. Parker. The policy of giving B.C.G. vaccinations to new born Aborigine babies continues. The sisters from the Division of Aborigine Health do most of the vaccinations in country areas, where they may have a continuing contact with the Aborigine population. A total of 188 babies have been vaccinated. The only abnormality recorded was an Aborigine child who at 4 months of age presented with enlarged liver and spleen.

DOMICILIARY VISITING

Regular domiciliary supervision of all patients who are on chemotherapy continues to reinforce the importance of regular drug therapy. The tracing of patients who fail to keep Clinic appointments accounts for the majority of home visits.

A total of 1 501 home visits were made of which 76 in the metropolitan area and 38 in country areas were to obtain contact information of newly notified cases.

B.C.G. THERAPY IN MALIGNANCY

Treatment is given to patients referred by Dr Young, Q.R.I., for inoperable lung cancer.

Also those referred by Dr T. Olsen in conjunction with cytotoxic chemotherapy for patients with Melanoma or Leukaemia. A total of 23 patients are receiving treatment.

During the year 245 treatments have been given.

CASE REGISTER

(TABLE XXXVIII)

There is now only one case of clinically active tuberculosis who has been positive for more than twelve months.

The organism isolated from this man is resistant to Isoniazid and, as has been reported previously, has greatly reduced ability to produce progressive disease in a guinea pig.

Cases of mycobacterial disease due to mycobacteria other than *M. tuberculosis* are frequently isolated for longer periods, but are not considered infectious to other persons. Unfortunately, these cases are less amenable to treatment than true tuberculosis.

Five cases of pulmonary tuberculosis due to *Mycobacterium bovis* were notified during this year.

SOCIAL WORK

During the year Mrs Redmayne resigned and the position of part-time Social Worker is now occupied by Mr R. Brownsey, who has just commenced duty.

As before, co-operation with the Social Work staff at Prince Charles Hospital is essential to the constitution of work with patients in need of assistance after their in-patient care.

Special problems arise in migrant families and amongst aboriginal people. Housing, employment and alcoholism remain the major social problems which are encountered.

The assistance of many agencies is gratefully acknowledged. These include—Social Security Departments, Queensland Housing Commission, the Community Medicine, and Home Care Service and other state government services and the Prince Charles Hospital. Help from voluntary agencies, such as Lifeline, Salvation Army, St. Vincent de Paul, and the Australian Tuberculosis and Chest Association is also gratefully acknowledged.

TUBERCULOSIS ALLOWANCES

(TABLE XXXIX)

Forty-six persons were receiving a Tuberculosis Allowance on the 30th June, 1977. Though its advantage over other forms of Social Security benefit is small, the Tuberculosis Allowance is still invaluable in providing assistance to families whose breadwinner is suffering from tuberculosis.

TABLE XX
NOTIFICATIONS OF TUBERCULOSIS FOR YEAR ENDED 30TH JUNE, 1977
NEW ACTIVE AND PROBABLY ACTIVE CASES
SHOWING AGE, SEX AND STAGE OF DISEASE

Age Group	Males					Females					Persons					Total Notifications						
	Bact. and History Proven Cases	Primary	Pleurisy with Effusion	Pulmonary			Non-Pulmonary	Bact. and History Proven Cases	Primary	Pleurisy with Effusion	Pulmonary			Non-Pulmonary	Total Notifications							
				Minimal	Mod-erately Advanced	Advanced					Minimal	Mod-erately Advanced	Advanced		Number	Per cent.						
0-4 ..	1	..	..	..	..	1 (1)	6	..	..	..	..	..	7 (6)	3·41
5-9 ..	..	..	..	..	..	1	..	1	..	..	..	..	1	0·49
10-14 ..	1	..	..	1	..	..	..	1	..	..	..	..	2	0·98
15-19 ..	3	..	..	2	..	1	3	..	..	..	..	..	6	2·93	
20-24 ..	..	..	..	1	..	..	2	..	..	..	..	..	1	1·95
25-29 ..	..	..	..	..	..	..	1	..	..	..	..	..	1	4·39
30-34 ..	7	..	..	1	..	..	2	..	..	..	..	..	1	3·90
35-39 ..	4	..	..	1	..	..	1	..	..	..	..	..	1	9·76
40-44 ..	15	..	..	6	..	..	2	..	..	..	..	..	3	30
45-49 ..	17	..	1	11	..	..	5	..	..	1	..	..	8	20 (2)		
50-54 ..	18	..	..	7	..	..	4 (1)	..	..	..	15 (1)	7	27 (2)	13·17	
55-59 ..	15	..	..	9	..	..	2	..	..	..	7	10	21 (1)	10·24	
60-64 ..	18	..	..	5	..	..	1	..	..	..	8 (1)	6	21 (1)	10·24	
65-69 ..	10	..	..	9	..	..	2 (1)	..	..	..	13 (1)	11 (1)	26 (2)	12·68	
70-74 ..	5	..	..	6	..	..	1	..	..	..	10	2	20	9·76	
75 and over	10	..	1	1	..	..	5 (1)	..	..	..	4	5 (2)	10	4·88			
Not stated ..	..	..	..	4 (2)	..	..	1	..	..	..	10 (1)	..	22 (3)	10·73
TOTAL ..	125	..	2	63 (2)	55 (3)	21 (1)	8 (2)	40	27 (2)	10 (1)	6	13 (6)	165	2	90 (4)	65 (4)	27 (1)	21 (8)	205 (17)	100·00

*Includes one case of pulmonary and non-pulmonary tuberculosis.
Atypical cases included and shown in brackets in appropriate categories.

TABLE XXI
RE-ACTIVATED CASES OF TUBERCULOSIS FOR YEAR ENDED 30TH JUNE, 1977
SHOWING AGE, SEX AND STAGE OF DISEASE

Age Group	Males				Females				Persons				
	Min.	Mod. Adv.	Adv.	Non-Pul-monary	Min.	Mod. Adv.	Adv.	Non-Pul-monary	Min.	Mod. Adv.	Adv.	Non-Pul-monary	Total Persons
0-4 .. ..	..	..	..	..	..	..	..	..	..	..	..	..	..
5-9 .. ..	..	..	..	..	..	..	..	..	..	..	..	..	..
10-14 .. ..	..	..	..	..	..	..	..	..	..	..	..	..	..
15-19 .. ..	..	..	..	..	..	..	..	..	..	..	..	..	..
20-24 .. ..	..	..	..	..	..	..	..	..	..	..	..	..	..
25-29 .. ..	..	..	..	..	..	..	..	..	..	..	..	..	..
30-34	1	..	..	..	..	..	..	..	1	..	..	..	1
35-39 .. ..	..	..	..	..	..	..	..	..	..	..	..	..	..
40-44 .. ..	..	..	1	..	..	..	..	..	..	..	1	..	1
45-49	1	..	..	..	2	..	..	..	3	..	..	..	3
50-54 .. ..	..	..	..	..	..	..	..	..	..	..	..	..	..
55-59	1	..	..	..	..	..	..	..	1	..	..	..	1
60-64 .. ..	..	1	1	..	..	..	..	..	..	1	1	..	2
65-69 .. ..	..	1	..	..	..	..	..	..	..	1	..	..	1
70-74	1	..	..	..	..	..	..	..	1	..	..	..	1
75 and over .. ..	..	1	..	..	..	..	..	..	..	1	..	..	1
Not stated .. ..	..	..	..	..	..	..	..	..	..	..	..	..	..
Totals	4	3	2	..	2	..	..	..	6	3	2	..	11

NOTE—For purposes of this form a “re-activated case of tuberculosis” is a patient who requires treatment for pulmonary tuberculosis after having been conventionally considered as “cured”. Quoting the Danish Index—“A patient is conventionally considered as ‘cured’ if his pulmonary tuberculosis for three successive calendar years without treatment is proved to be abacillary by adequate bacteriological tests”.

TABLE XXII
SOURCE OF NOTIFICATIONS AND REACTIVATIONS
FOR YEAR ENDED 30TH JUNE, 1977

Source	Pulmonary Cases		Non-pulmonary Cases		Total Cases
	No.	Per cent.	No.	Per cent.	
Mass X-ray surveys* ..	51	23.61	..	..	51
Private medical practitioners:					
(a) direct	3	1.39	11	5.09	14
(b) via chest clinic ..	20	9.26	3	1.39	23
General hospitals	45	20.83	6	2.78	51
Chest hospitals, annexes and sanatoria	38	17.59	..	..	38
Chest clinics	25	11.58	..	..	25
Repatriation clinics and hospitals	6	2.78	..	..	6
Death certificates	4	1.85	2	0.93	6
Special groups:					
(a) Mental hospital surveys ..	..	..	..	..	..
(b) Gaol surveys .. ..	..	..	..	..	..
(c) Others—					
(i) Mount Isa Mines Clinic	1	0.46	..	..	1
(ii) Immigration Films	1	0.46	..	..	1
Total notifications and reactivations ..	194	89.81	22	10.19	216

*For the purposes of this form cases may be attributed to mass radiography if they are diagnosed within one year.
NOTE.—Transfers-in not to be included.

TABLE XXIV
NUMBER OF TUBERCULOSIS NOTIFICATIONS AND RATE IN
QUEENSLAND (PER 100 000 MEAN POPULATION)

Year				Number of Notifications	Notification Rate
1949-1950 .. ..	..	..	..	513	43.7
1950-1951 .. ..	..	..	..	595	49.9
1951-1952 .. ..	..	..	..	780	62.9
1952-1953 .. ..	..	..	..	943	74.1
1953-1954 .. ..	..	..	..	821	63.1
1954-1955 .. ..	..	..	..	725	54.6
1955-1956 .. ..	..	..	..	685	50.3
1956-1957 .. ..	..	..	..	639	45.8
1957-1958 .. ..	..	..	..	852	59.9
1958-1959 .. ..	..	..	..	789	54.4
1959-1960 .. ..	..	..	..	787	53.2
1960-1961 .. ..	..	..	..	767	51.1
1961-1962 .. ..	..	..	..	721	47.1
1962-1963 .. ..	..	..	..	826	53.1
1963-1964 .. ..	..	..	..	856	54.1
1964-1965 .. ..	..	..	..	891	55.2
1965-1966 .. ..	..	..	..	623	37.8
1966-1967 .. ..	..	..	..	563	29.5
1967-1968 .. ..	..	..	..	512	29.8
1968-1969 .. ..	..	..	..	382	21.8
1969-1970 .. ..	..	..	..	294	16.8
1970-1971 .. ..	..	..	..	301	16.8
1971-1972 .. ..	..	..	..	248	13.6
1972-1973 .. ..	..	..	..	247	13.0
1973-1974 .. ..	..	..	..	241	12.4
1974-1975 .. ..	..	..	..	235	11.7
1975-1976 .. ..	..	..	..	213	10.6
1976-1977 .. ..	..	..	..	216	10.4

TABLE XXV
NUMBER OF DEATHS FROM TUBERCULOSIS AND DEATH RATE
(Per 100 000 MEAN POPULATION) QUEENSLAND

Calendar Year				Deaths	Death Rate
1950 .. ..	..	..	..	236	19.8
1951 .. ..	..	..	..	226	18.4
1952 .. ..	..	..	..	216	17.2
1953 .. ..	..	..	..	162	12.6
1954 .. ..	..	..	..	140	10.6
1955 .. ..	..	..	..	137	10.2
1956 .. ..	..	..	..	81	5.7
1957 .. ..	..	..	..	92	6.6
1958 .. ..	..	..	..	83	5.9
1959 .. ..	..	..	..	78	5.4
1960 .. ..	..	..	..	83	5.7
1961 .. ..	..	..	..	72	4.7
1962 .. ..	..	..	..	84	5.5
1963 .. ..	..	..	..	80	5.1
1964 .. ..	..	..	..	75	4.7
1965 .. ..	..	..	..	42	2.6
1966 .. ..	..	..	..	43	2.6
1967 .. ..	..	..	..	58	3.4
1968 .. ..	..	..	..	60	3.4
1969 .. ..	..	..	..	51	2.9
1970 .. ..	..	..	..	37	2.1
1971 .. ..	..	..	..	29	1.6
1972 .. ..	..	..	..	24	1.3
1973 .. ..	..	..	..	12	0.6
1974 .. ..	..	..	..	22	1.1
1975 .. ..	..	..	..	27	1.3
1976 .. ..	..	..	..	*	*

* Not available

TABLE XXIII
NOTIFICATION DURING YEAR ENDED 30TH JUNE, 1977
SHOWING BACILLARY STATUS OF PATIENTS AT TIME OF NOTIFICATION

Age Groups	Number of Patients Receiving Initial Treatment			Number of Re-treatment Cases		
	Bacillary Positive	Atypical	Bacillary Negative	Bacillary Positive	Atypical	Bacillary Negative
0- 4	1	6	..	..	..	..
5- 9	..	..	..	..	..	..
10-14	1	..	..	..	..	..
15-19	1	..	1	..	..	..
20-24	6	..	..	..	..	..
25-29	2	..	2	..	..	..
30-34	8	..	1	1	..	..
35-39	6	..	2	..	..	..
40-44	14	2	4	1	..	..
45-49	20	2	5	2	1	..
50-54	18	1	2	..	..	..
55-59	17	1	3	1	..	..
60-64	21	2	3	1	1	..
65-69	12	..	8	..	1	..
70-74	8	..	2	..	1	..
75 and over	13	3	6	..	..	1
Not stated	..	..	1	..	..	..
Totals	148	17	40	6	4	1

TABLE XXVI
TUBERCULOSIS NOTIFICATIONS OF MIGRANTS YEAR ENDED
30TH JUNE, 1977

Arrival in Australia	British		Non-British	
	Number	Percentage of Total Notified Migrants	Number	Percentage of Total Notified Migrants
Within 1 year ..	..	..	3	7.14
Within 5 years ..	2	4.76	3	7.14
Over 5 years ..	12	28.57	22	52.39
Totals ..	14	33.33	28	66.67

Migrants (42) were 19.44 per cent. of all notified tuberculosis cases (216)

TABLE XXVII
NUMBER OF NEW CASES OF CARCINOMA OF THE LUNG SEEN AT
THE BRISBANE DIVISION OF TUBERCULOSIS

1st July, 1958 to 30th June, 1959	..	..	56
1st July, 1959 to 30th June, 1960	..	..	65
1st July, 1960 to 30th June, 1961	..	..	83
1st July, 1961 to 30th June, 1962	..	..	111
1st July, 1962 to 30th June, 1963	..	..	109
1st July, 1963 to 30th June, 1964	..	..	100
1st July, 1964 to 30th June, 1965	..	..	101
1st July, 1965 to 30th June, 1966	..	..	116
1st July, 1966 to 30th June, 1967	..	..	147
1st July, 1967 to 30th June, 1968	..	..	104
1st July, 1968 to 30th June, 1969	..	..	131
1st July, 1969 to 30th June, 1970	..	..	70
1st July, 1970 to 30th June, 1971	..	..	111
1st July, 1971 to 30th June, 1972	..	..	54
1st July, 1972 to 30th June, 1973	..	..	37
1st July, 1973 to 30th June, 1974	..	..	56
1st July, 1974 to 30th June, 1975	..	..	73
1st July, 1975 to 30th June, 1976	..	..	56
1st July, 1976 to 30th June, 1977	..	..	32

TABLE XXVIII
CASES OF LUNG CANCER DISCOVERED BY M.X.R.
FOR CALENDAR YEAR 1976

1959	..	..	..	..	..	3
1960	..	..	..	..	..	40
1961	..	..	..	..	..	50
1962	..	..	..	..	..	16
1963	..	..	..	..	..	68
1964	..	..	..	..	..	70
1965	..	..	..	..	..	66
1966	..	..	..	..	..	90
1967	..	..	..	..	..	93
1968	..	..	..	..	..	101
1969	..	..	..	..	..	50
1970	..	..	..	..	..	62
1971	..	..	..	..	..	81
1972	..	..	..	..	..	49
1973	..	..	..	..	..	93
1974	..	..	..	..	..	66
1975	..	..	..	..	..	99
1976	..	..	..	..	..	84

TABLE XXIX
COMPULSORY MASS CHEST X-RAY SURVEY OF PERSONS OVER 21 YEARS OF AGE FROM 1ST JANUARY, 1976 TO 31ST DECEMBER, 1976

Locality	Estimated Number of Persons over 21 years of Age	Number of Micro Films Taken	Number of Active Cases	Number of Cases per 1,000 Micro Films Taken	Inactive Cases	Non-specific Fibrosis	Intercurrent or Pneumonic	Cardiac Abnormality	Carcinoma	Other Tumour	Pneumoconiosis	Bronchietasis	Sarcoidosis	Other Diseases	No Significant Abnormality After Investigation	Under Investigation	Old Cases Re-discovered
Special Surveys	4 160	3 720	2	0.54	58	33	8	64	7	1	1	3	2	30	63	14	..
Brisbane Division	168 865	157 599	18	0.11	1 308	278	36	568	24	7	10	29	21	1 020	734	39	..
Remote Areas Survey ..	2 170	5 336	1	0.19	12	8	2	16	1	1	..	2	..	8	38	1	..
Toowoomba Area	62 235	65 096	7	0.11	110	179	41	444	24	11	2	26	3	121	883	40	..
Townsville Area	62 120	59 420	9	0.15	268	225	30	522	28	11	7	31	3	269	521	33	..
Totals	299 550	291 171	37	0.13	1 756	723	117	1 614	84	31	20	91	29	1 448	2 239	127	..

TABLE XXX
MASS X-RAY SURVEY—QUEENSLAND—YEAR ENDED 31st DECEMBER, 1976

Age	Number X-rayed	Active		Inactive		Suspect Active		Other Conditions	
		Number	Per 1,000 X-rayed	Number	Per 1,000 X-rayed	Number	Per 1,000 X-rayed	Number	Per 1,000 X-rayed
0-14	1 255	..	..	..	..	..	..	2	1.59
15-19	6 927	..	..	2	0.29	1	0.14	11	1.59
20-24	31 234	..	..	16	0.51	6	0.19	40	1.28
25-29	40 143	1	0.02	37	0.92	1	0.02	51	1.27
30-34	35 689	..	..	62	1.74	5	0.14	88	2.47
35-39	30 265	2	0.07	82	2.71	4	0.13	143	4.72
40-44	26 179	4	0.15	110	4.20	4	0.15	111	4.24
45-49	26 346	5	0.19	152	5.77	14	0.53	189	7.17
50-54	24 478	3	0.12	185	7.56	12	0.49	232	9.48
55-59	19 913	7	0.35	209	10.50	23	1.16	265	13.31
60-64	16 904	4	0.24	218	12.90	15	0.89	334	19.76
65-69	12 565	5	0.40	229	18.23	11	0.88	288	22.92
70-74	8 655	3	0.35	178	20.57	13	1.50	243	28.08
75-Over	9 194	1	0.11	268	29.15	12	1.31	327	35.57
N.S.	1 424	2	1.40	8	5.65	6	4.21	18	12.64
Total	291 171	37	0.13	1 756	6.03	127	0.44	2 342	8.04

TABLE XXXI
NUMBER OF X-RAY EXAMINATIONS CARRIED OUT—1st JANUARY, 1976 TO 31st DECEMBER, 1976

	Chest Clinic	Mobile Units	Royal Brisbane Hospital	Princess Alexandra Hospital	Too- woomba	Rock- hampton	Towns- ville	Cairns	Thursday Island	Total
Micro Films	42 366	290 772	3 232	6 098	2 225	960	1 917	364	..	347 934
Micro Re-Rays	3 332	399	..	57	414	131	..	..	48	4 381
Other Large Films ..	1 881	..	26	98	5 651	1 452	54	3 692	2 133	14 987
TOTAL	47 579	291 171	3 258	6 253	8 290	2 543	1 971	4 056	2 181	367 302

TABLE XXXII
SUMMARY OF ACTIVE CASES FOUND FOLLOWING ELECTORAL ROLL CHECK—PERIOD 1962 TO 1976

Year	Metropolitan X-rays Taken	Active Cases	Country X-rays Taken	Active Cases	Combined X-rays	Combined Active Cases
1962	1 743	8	3 850	17	5 593	25
1963	3 743	9	1 755	13	5 498	22
1964	4 452	7	2 150	12	6 602	19
1965	2 611	6	1 687	6	4 298	12
1966	4 079	6	3 152	13	7 231	19
1967	7 384	12	2 736	9	10 120	21
1968	4 544	9	2 310	11	6 854	20
1969 .. .. .	..	..	5 819	17	5 819	17
1970	4 894	7	2 440	13	7 334	20
1971	6 463	4	2 085	7	8 548	11
1972	1 794	1	1 368	..	3 162	1
1973	4 085	4	748	2	4 833	6
1974	692	1	5 289	5	5 981	6
1975	2 646	2	6 670	4	9 316	6
1976	5 184	2	425	1	5 609	3
Totals	54 314	78	42 484	130	96 798	208

RATE PER 1 000 FILMS—
Metropolitan 1.4 per 1 000
Country 3.06 per 1 000
Combined 2.14 per 1 000

TABLE XXXIII
MASS X-RAY SURVEY—QUEENSLAND—FROM 9th NOVEMBER, 1959 TO 31st DECEMBER, 1976

Year	Number X-rayed	Active		Inactive		Suspect Active		Other Conditions	
		Number	Per 1 000 X-rayed	Number	Per 1 000 X-rayed	Number	Per 1 000 X-rayed	Number	Per 1 000 X-rayed
9-11-59—31-12-59 ..	19 515	47	2.41	146	7.48	6	0.31	549	28.13
1960	158 023	370	2.34	1 268	8.02	144	0.91	3 128	19.79
1961	155 842	96	0.62	1 649	10.58	241	1.55	2 686	17.24
1962	148 049	190	1.28	1 015	6.86	397	2.68	1 394	9.42
1963	250 858	280	1.1	1 950	7.8	1 057	4.2	2 794	11.1
1964	312 031	345	1.1	3 361	10.8	601	1.9	3 277	10.5
1965	345 530	185	0.5	2 105	6.1	801	2.3	9 038	26.2
1966	304 128	136	0.4	1 479	4.9	335	1.1	7 065	23.2
1967	293 255	95	0.3	1 520	5.2	..	..	8 164	27.8
1968	328 260	131	0.4	1 604	4.9	..	..	8 922	27.2
1969	197 327	59	0.3	697	3.5	..	..	6 279	31.8
1970	199 361	42	0.2	1 415	7.1	..	..	5 878	29.5
1971	169 208	42	0.2	780	4.6	17	0.1	6 108	36.1
1972	223 773	84	0.4	1 427	6.4	40	0.2	5 677	25.4
1973	209 400	53	0.3	1 494	7.1	97	0.5	4 564	21.8
1974	208 273	36	0.17	1 764	8.46	86	0.41	3 015	14.47
1975	276 445	44	0.16	2 586	9.35	314	1.14	2 377	8.60
1976	291 171	37	0.13	1 756	6.03	127	0.44	2 342	8.04
TOTAL	4 090 449	2 272	0.56	28 016	6.85	4 263	1.04	83 257	20.35

TABLE XXXIV
ADULT TUBERCULIN TESTING—MAY, 1973
TO JUNE, 1977

Persons X-rayed	Skin Test Results Returned	Strong Positive Reactors
1 007 220	818 365 (81.2%)	104 604 (12.7%)

DIVISION OF INDUSTRIAL MEDICINE

Director of Industrial Medicine: E. M. RATHUS, M.B., Ch.B. (Cape Town)

Medical Officer: G. G. W. CHALK, M.B., B.S. (Qld)

Industrial Health Inspector: J. W. MULCAHY, A.R. San. I.

This Division provides a service for the investigation of occupational health hazards. The scientific resources of the Government Chemical Laboratory are relied on for detailed delineation of physical and chemical data and the Laboratory of Microbiology and Pathology for biochemical and related studies. The Chest Clinic co-operates in X-ray surveys of men in dusty occupations. A close liaison is maintained with the Department of Labour Relations and Consumer Affairs, and its Inspectorate of Factories and Shops, and Division of Occupational Safety.

ROUTINE INSPECTIONS

Approximately 400 inspections and investigations were carried out in various industries by the staff during the year. Many of these were amplified by full-scale investigations at the industrial hygiene level in order to ascertain the specificity of various toxic, chemical and physical hazards in the working environment. Several were of more than usual interest and are reported below.

GENERAL

Continued interest in hazardous dusts encountered in industry led to the investigation of a diatomite mine and associated industries processing the material. Surveys were conducted on large-scale zinc-galvanising firms and an unusual chlorinated bi-phenyl problem in coal mines was investigated. Dust counts, toxic fume and carbon monoxide problems added to the variety of problems encountered during the year. At the laboratory level about 2 400 tests were undertaken on lead workers, agricultural workers and others in relation to haematological, bio-chemical and chemical tests used in the assessment of such workers.

LEAD

The Division finds that lead exposure maintains its reputation as one of the oldest recognised problems of industrial medical practice.

Workmen are protected by programmes of routine biological testing and by scheduled workplace environmental monitoring. The frequency of testing of both aspects varies with the degree of hazard estimated from inspection or from the test results.

Routine surveillance of lead workers, involved the Division in performing, and reviewing blood and urine test results from the 405 workmen tested. No workmen were hospitalized and it appears that by testing programmes such as this, it is possible to predict, before symptoms or adverse absorption occurs, these areas where remedial action is required.

Testing of environmental conditions is mainly aimed at new premises, where alterations have been made and those premises where routine biological test results indicate problems exist. Based on the biological test results and the lead-in-air tests, this Division makes advice available to any management or union associated with the manufacture of lead-containing products.

Investigations were carried out in the more usual industries of plastics, storage battery and paint production, metal recycling and smelting, to the less usual areas of newspaper printing and police practice ranges where fragmentation of lead projectiles in confined spaces can present a problem.

PESTICIDES

Routine testing of men and women involved in the formulation, packaging and use of organochlorine, organophosphate, carbamate, organic mercury and arsenical pesticides has continued.

The Division has co-operated with the Department of Primary Industries in a major survey of pesticide absorption in the Nambour small crops and citrus areas and of tobacco farmers in the Beerwah area. In all, 129 farmers, distributors,

experimental farm and D.P.I. staff were tested with only one case each of excessive absorption of organochlorine and organophosphate pesticide found. It is planned to resurvey the tobacco growers after a full season of high usage.

With provisions of water from the Fairbairn Dam near Emerald, irrigation of land has led to a marked increase in area of cotton production. The high requirement of pesticide for economic production of cotton means aerial application over long hours for the pilots and loader drivers concerned. In this area a survey of 14 contract sprayers revealed two men with symptoms of organophosphate pesticide poisoning and four men who, though without symptoms showed an acetyl cholinesterase activity level lower than normal and indicative of excessive absorption of the pesticide. This again points to the real problems associated with contract spraying as opposed to the episodic exposure of the farmer-applicator. With the increased usage of organophosphate and carbamate pesticides with their more acute toxicity, to replace the organochlorines, it is predicted that more cases such as these could occur.

A survey of commercial house pest eradicators in Brisbane and provincial areas involved some hundred applicators and here no cases of excessive absorption of any pesticide were found. Those men working with the fumigant methyl bromide were additionally tested and again no excessive absorption indicated.

By this larger type of survey it is possible to gain an industry-wide picture of work patterns and overall safety in an industry in which men are in contact with a potentially hazardous group of chemicals.

NOISE

On 1st March, 1977, the "Hearing Conservation Rule" administered under the provisions of the *Factories and Shops Act* 1960-1975, became operative. This has resulted in additional requests for the investigation of noise problems in industry. Noise surveys were undertaken by the Industrial Health Inspector in a large variety of situations, and audiometric surveys carried out on occasions. The value of these surveys is exemplified by an audiometric survey of 114 men amongst whom 17 showed slight to moderate evidence of noise-induced deafness. All had a positive history of unprotected exposure to noise in industrial situations at levels above the accepted damage level of 90dbA.

In addition the Industrial Health Inspector undertook 200 preliminary and follow-up inspections of health hazards to assess problems and organise X-ray surveys of specially exposed groups.

MINING AND ALLIED INDUSTRIES

Apart from routine studies, several unusual situations were investigated. Knowledge of the presence of a diatomaceous earth (kieselguhr) mine led to an inspection of the operation and an assessment of the hazard. The need to evaluate the situation stems from the fact that the mined material ranges from 75-95 per cent pure silicon dioxide, and many cases of severe diatomaceous earth pneumoconiosis have been described in the literature.

A direct consequence was the investigation of two firms, milling, grinding and packing the fine powder, which has many uses as filter material, fillers in rubber, plastics etc., and strangely enough as litter packing for cats. This led to design advice based on the dust counts obtained. X-ray studies of men to date was negative.

A rather unexpected investigation arose from the presence of polychlorinated bi-phenyls in mine water. The contamination had occurred in a flooded section of the mine from a submerged and damaged transformer. Men had complained of sore eyes, and nausea, but it was impossible to be didactic about any relationship to the compounds.

The mud contained 0.14 per cent of PCB, and explained the ready detection by odour in the area. Blood specimens of exposed men showed levels which fell considerably over a period of two months. PCB's were virtually undetectable in

the urine at any stage, an expected characteristic of the organo-chlorines similar to D.D.T., Dieldrin and others. The results in the blood are tabulated for interest.

Case	Date	PCB in Blood μg/ml	Date	PCB in Blood μg/ml
1	20-10-76	0.4	14-12-76	0.18
2	20-10-76	0.2	14-12-76	..
3	20-10-76	0.15	14-12-76	0.025

A detailed investigation of a nickel mine and smelter established that good dust control existed at all levels from mine to final product. Control of potential hazards was excellent and an energetic safety programme existed in relation to the main hazard of H₂S and NH₃. Skin contamination with black Ni-Co Sulphides was a continued source of complaint, and discussions centred around this problem with a view to mitigation.

PNEUMOCONIOSIS

One man with known exposure to 99 per cent free silica used in abrasive soap manufacture has shown evidence of early nodularity. Plant design is now fully enclosed and exposure relates to unsatisfactory dust levels some 15 years ago. The asbestos industry continues to demonstrate the effects of exposure to high concentrations of fibre many years ago. Three cases were seen with typical lung changes and a positive history of high exposure. Pleural plaques and calcification are increasingly seen in operators exposed to moderate concentrations in the long term. The prognostic significance of these changes is quite uncertain. The industry has expended a

major effort in correction of plant design and method, and dust counts are now well below internationally accepted tolerances.

The gradual replacement of asbestos from non-essential uses, together with the excellent controls now obtained should eliminate serious hazard from the industry.

MISCELLANEOUS

Zinc fume was found to be well-controlled in several large galvanising plants, and a fluoride hazard in a super-phosphate plant was found to be unacceptable under the circumstances existing at the time. The ever-hazardous problem of carbon monoxide produced a characteristic incident in a cold room, when a faulty fork-lift produced 500 ppm at the driver's level. The need for constant checking of equipment in recognised hazards is obvious. No serious cases occurred but a salutary lesson was learnt.

Official attendance was required at meetings of the Occupational Health Committee of the National Health and Medical Research Council, the Health, Welfare and Safety Board of the Department of Industrial Affairs and the Chest Board of the State Government Insurance Office.

The Director and the Medical Officer delivered several addresses on technical subjects to interested groups during the year, and assisted in the conduct of several symposia on occupational health matters relating to noise and pesticide toxicology. Approval has been obtained for the Medical Officer to undertake the M.P.H. (Occupational Medicine) at the University of New South Wales during 1978. This post-graduate accreditation, together with the practical background of the work of the Division should be of great value in the future to the Department.

DIVISION OF HEALTH AND MEDICAL PHYSICS

Director: K. A. STEVENS, B.Sc.

Physicists: D. F. MINES, M.Sc., and L. G. HINSCH, B.Sc.

Technical Officer (Radiography): N. H. SERICO

Chief X-ray Engineer: P. G. MCNEILLY

Senior Electronic Technician: A. J. DORAN

Senior Dental Servicing Officer: N. NEIL

The Division has two broad areas of responsibility, namely, Health Physics and Medical Physics.

In Health Physics, the Division undertakes the administration of the Radioactive Substances Act, the monitoring of the hazards associated with the use of ionising radiation and microwaves in industry, medicine and research.

In Medical Physics, the Division acts as advisers to the Department of Health in the assessment of and purchase of electro-medical equipment for public hospitals throughout the State. In addition, the Division has a service organisation which provides for the routine maintenance and repair of breakdown of all X-ray, medical electronic, electro-surgical, physiotherapy and pathology equipment, and medical instruments in all public hospitals outside of the metropolitan hospitals of Brisbane. The Division is also responsible for the routine maintenance and repair of breakdown of all dental equipment under the control of the Division of Dental Services.

The Division has responsibilities in all centres of population throughout the State and to undertake their work the staff of the Division in the period under review made 1 384 visits to institutes and hospitals throughout the State.

The work of the Division is set out under the following headings:—

- (1) Radiation Health;
- (2) Radiographic Advisory Service;
- (3) X-ray Engineering;
- (4) Medical Electronics;
- (5) Dental Equipment Servicing;
- (6) Instrument Repair;
- (7) Education.

(1) Radiation Health

Licences to use radioactive substances or irradiating apparatus and registrations of irradiating apparatus, as required under the Radioactive Substances Act have continued to increase. During the last year licences granted by the Radiological Advisory Council of Queensland have increased to 434 and registrations to 828.

The radiation monitoring service has shown little increase in the number of personnel occupationally exposed to radiation being monitored. Approximately 2 000 people in industrial, research or medical application of ionizing radiation in Queensland are covered by the service and 270 are covered in Papua New Guinea. This year has seen the change from the conventional Personal Monitoring Film to the use of Thermoluminescent Dosimetry System.

The results of this service, in conjunction with inspections undertaken during the year, show a high safety standard in the use of ionizing radiation.

Monitoring of microwave devices has continued to be carried out upon request.

(2) Radiographic Advisory Service

This group provides an advisory service to all country hospital X-ray departments and provides a relieving radiographer system for country hospital radiographic staff during recreation, long service leave and prolonged sick leave.

During this year staff of this section made 170 visits to country hospitals and institutions to undertake the inspection of facilities and tuition of operators. The relieving radiographers provided service to enable 56 radiographers from 23 hospitals to take recreation leave.

(3) X-ray Engineering

A total of 405 visits were made to country centres for the routine maintenance and repair of breakdown of X-ray equipment. In addition, 74 pieces of equipment were repaired in the workshop. 162 breakdowns of units were solved with the unit operator, radiographer or local electrician acting under the guidance of the X-ray Engineers by telephone.

Complete refurbishing of 10 X-ray units were undertaken in the workshop. 8 X-ray units were reinstalled in modified X-ray departments. All new installations of equipment by supply companies have been inspected.

(4) Medical Electronics

The medical electronics group made a total of 346 visits to centres in the course of their duties. 260 of these were to country hospitals for the routine maintenance and repair of breakdown of equipment. 14 were visits to country hospitals to monitor patients with implanted cardiac pacemakers when a total of 70 patients were monitored. 82 were visits for the repair of dialysis units used by 37 patients who undertake renal dialysis in their homes.

In the same period, 922 units were repaired or checked in the workshop. This includes equipment which had a pre-delivery check for performance and safety before supply to hospitals. The section has designed and manufactured defibrillator check units for supply to country hospitals to enable such hospitals to keep a constant check of the operation of this essential piece of equipment.

(5) Dental Equipment Service

This section has been established to provide service of dental equipment to all centres under the control of the Division of Dental Services. During the year, the establishment of the workshop has been completed and the service programme commenced. Initially, the programme was directed to school dental centres. It has now been extended to hospital clinics in the more remote country areas. Next year it will cover all dental centres.

During the year a total of 290 visits for routine maintenance and repair of breakdowns have been made to dental clinics throughout the State. 10 caravans have been installed with dental units. Dental X-ray units have been installed in 28 dental clinics and caravans. The section has manufactured and fitted out 8 portable dental units. In May, 1977, the dental instrument repair facility which was designed by the section was completed and since that time 65 instrument repairs have been effected.

(6) Instrument Repair Section

A staff member was appointed for this work in March 1977. The section has now been equipped and has commenced to undertake work for the hospitals. Even in the short period

of operation repairs have been carried out on 56 instruments. In addition, the section has constructed 18 instruments for use in hospitals and other sections within the Division.

(7) Education

The Division continues to spend a significant part of its time in both informal and formal training programmes. All technical staff in the field continue to educate users in the correct operation of units in the hospital. Such programmes play a significant part in reducing breakdowns and ensures the full utilisation of equipment.

During the year staff of the Division took part in the following formal training programmes: Training course for medical officers who were to take appointments in country hospitals; training course on radiation safety and dental radiography for dental therapists and a training course on the care of dental equipment for dental therapists.

The Division has continued the training of personnel for the World Health Organization. During the year the Division has had one X-ray Engineer from Burma, two X-ray Engineers from the Phillippines, one X-ray Engineer from American Samoa and four Radiographers from Papua New Guinea attached to it for training.

Committees

The staff of the Division is involved at international, national and State level on the various committees pertaining to their responsibilities.

The Director is a member of Committee III of the International Commission on Radiological Protection, a member of the Radiation Health Committee and the Committee on the Disposal of Radioactive Waste of the National Health and Medical Research Council. He is a member of the Standards Association of Australia Committee EL18/10 on the Safety of Fixed X-ray Installations. He serves on the Radiological Advisory Council of Queensland, the Queensland Radium Institute and the Advisory Committees on Radiography and Medical Physics at the Queensland Institute of Technology.

Mr Mines is a member of the Standards Association of Australia Committee EL18, Electro-medical Equipment and EL18/1, Safety Requirements.

Mr Hinsch is Secretary of the Radiological Advisory Council of Queensland and a member of the Standards Association of Australia Committee SF19 on Lasers.

Mr Serico is a member of the Radiological Advisory Council of Queensland and the X-ray Committee of the Queensland Radium Institute.

DIVISION OF MATERNAL AND CHILD HEALTH

Director: J. F. McFARLANE, M.B., B.S., F.R.C.P.(Edin.), F.A.C.M.A., M.F.C.M.

Deputy Director: L. BURLESS, M.B., B.S.(Syd.).

Medical Officer: J. WAGNER, M.B., B.S.(Syd.).

Superintendent: D. GODSMARK, S.R.N.

Deputy Superintendent: K. ELLIOTT, S.R.N.—resigned 25-2-77.

Nurse Supervisors:

M. GLEN, S.R.N.

L. FIORI, S.R.N.

E. McLOUGHLIN, S.R.N.

SERVICES PROVIDED

BABY CLINICS:

Metropolitan Centres ..	16
Metropolitan Sub-Centres ..	82
Country Centres	31
Country Sub-Centres	160

SPECIAL CENTRES:

Rail Car	7 stops
Mobile Vans	42 stops
Mobile Van—Cairns	} 30 stops
Mobile Van—Gold Coast	

From three Royal Flying Doctor

Service bases	61 stops
Toddlers Clinics	59 Clinics
Ante-natal Clinics	8 Clinics
Medical Baby Clinics	8 Clinics

There are now 371 centres and sub-centres throughout the State not including the 61 stops made by the sisters attached to the Royal Flying Doctor Service bases at Mt. Isa, Cairns and Charleville.

During the year a new sub-centre was opened at Dysart.

The Administration Offices at 184 St Paul's Terrace were completed in March, 1977 and it is anticipated that the mothercraft home will be ready for occupation late in the year.

SPECIAL LECTURES

Lectures were given during the year to various community groups—kindergartens, mothers unions and church groups. Staff were involved in the educational programmes of the Aboriginal Health Service, Community Medicine, Australian Pre-School Association and Dental Therapists. Great interest exists at the present time in the field of child growth and development.

PUBLICATIONS

The publications "Care of Mother and Child", "Expectant Mother", "Before and After—The Facts and Functions of Childbirth" continue to be well received by the public. A new edition of "Care of Mother and Child" was printed during the year. The following newsletters were distributed during the year to metropolitan and country newspapers:—

- Why do People become Fanatical about Child Care?
- What Causes Vomiting?
- What does a Convulsion Mean?
- Do We make our Children Restless at Night?
- The Rights of the Child.
- Do We Expect too much of Our Children?

ANALYSIS OF CENTRE WORK

During 1976 the total births in Queensland fell from 36 403 in 1975 to 35 241. The downward trend has continued steadily from 1971 when there were 39 970 births. Clinic visits have fallen accordingly—511 886 visits in 1976-7 compared with 525 389 visits in 1975-6. There were 26 372 new babies seen during the year representing a 75 per cent response. Of these 12 026 were referred to a doctor for medical consultation. A total of 13 940 feedings were observed by the trained staff and 5 285 food demonstrations were given.

The telephone is frequently used as a means of obtaining advice by mothers unable to visit their nearest baby clinic—4 073 calls were made to the Director's Consultant Clinic and Toddler's Clinic at Fortitude Valley as compared with 3 528 the previous year and the total calls to centres throughout the metropolitan and country areas was 16 726.

GUTHRIE TESTS

A total of 316 673 Guthrie Tests have been reported since testing began late in 1968—25 cases of phenylketonuria and 10 cases of hyperphenylalanemia have been detected. In 1976, 35 128 tests were performed on infants and no positive results recorded: there have been 283 requests for repeat tests (in 1975, 35 278 tests were performed and 211 repeat tests were requested). A number of doctors are now requesting tests on expectant mothers. In all 106 tests have been performed and no positive cases have been detected. This is as a result of recommendation by the Australian Paediatric Association and it is anticipated that more doctors will require that their ante-natal patients are tested. An undetected mother with phenylketonuria can damage the foetus in utero.

SPECIAL SERVICES

The Committee to co-ordinate Child Abuse has met regularly during the year and investigated mandatory reporting of child abuse. There seems to be no doubt that this will assist children. The South Australian and New South Wales legislation has been discussed and it is the recommendation of the committee that the legislation be integrated into the relevant sections of the Criminal Code, Children's Services Act and Health Act.

The incidence of abuse appears to be rising: it is difficult to know if this is a real increase or is the result of better reporting. The committee consists of—

Mr R. Whitrod—Police Commissioner

Mr F. Clifford—Deputy Police Commissioner (Chairman)

Dr H. Forbes—Australian Medical Association and Royal Brisbane Children's Hospital

Mr R. Plummer—Director of Children's Services

Dr J. McFarlane—Director, Maternal and Child Health (Secretary).

INSPECTION VISITS

Inspection visits were made by Dr McFarlane, Dr Burless, Miss Godsmark, Miss Elliott, Miss McLoughlin, Miss Fiori and Miss Glen.

Paddington, Ashgrove, Kelvin Grove, Bardon, The Gap, Inala Heights, Inala, Argonaut—Woodridge, Woodridge, West End, Indooroopilly, Kenmore, Toowong, Booval, Mt Gravatt, Upper Mt Gravatt, Nundah, Wacol Army Camp, Toowoomba, Ipswich, Bundaberg, Gympie, Murgon, Dalby, Chinchilla, Kingaroy, Roma, Howard, Toowoomba Home, Ipswich Home, Clayfield Home, Carole Park, Home Visiting—North Side and South Side, Margate, Clontarf, West Chermide, Bald Hills, Lawnton, Zillmere, Banyo, Geebung, Everton Park, Ferny Hills, Clayfield, Hendra, Camp Hill, Belmont, Cannon Hill, Norman Park, Morningside, Bulimba, Brighton, Salisbury, Tarragindi, Rockhampton Home, St Paul's Home, Nambour, Maroochydore, Coolum, Southport, Tewantin, Warwick, Goondiwindi, Pittsworth, Maryborough, Pinalba, Rockhampton, Fitzroy Street—Rockhampton, Koongal, Marlborough, Mount Morgan, North Rockhampton, Park Avenue, St Lawrence, West Rockhampton, Yeppoon, Biloela, Baralaba, Woorabinda, Gladstone, Tannum Sands, Blackwater, Emerald, Longreach, Townsville, Ingham, Innisfail, Cairns, Mareeba, Malanda, Millaa Millaa, Mt Isa, Moranbah, Dysart.

SPECIAL BABY CLINICS

Mobile Vans

There are now 10 vans in service throughout the State—8 in the Brisbane Area, 1 in Cairns and 1 on the Gold Coast. Two of the vans will ultimately be used in Mackay and

Townsville. Mothers continue to support the service with great enthusiasm. In 1976-77, there were 48 335 attendances as compared with 35 576 the previous year.

It is essential that preventive medical services be taken to the areas of greatest need and the use of the clinic vans is making this possible although the type of service offered is of a first aid nature and needs the back-up of nearby parent centres with complete facilities.

Rail Car

During the last year attendances at the Rail Car have decreased from 1 184 to 1 120. As the grazing areas of the State continue to lose population it is inevitable that clinic attendances will fall. The Rail Car may have ceased to be a viable service to the community of the area.

Royal Flying Doctor Service

Sisters based at Mount Isa, Cairns and Charleville continued to fly with the Royal Flying Doctor Service on their routine flights.

Small country towns, station properties and aboriginal settlements are thus provided with an advisory baby health service that could only be provided in the past by the correspondence service.

Attendances at the aboriginal settlements have decreased over the last year (5 398 for 1976-77 as compared with 6 217 for 1975-76) perhaps reflecting the more permissive attitude held by those living there. The changes that are made in the schedules of the Royal Flying Doctor Service may also partly contribute to the drop in attendances.

CORRESPONDENCE SECTION

Three hundred and seventy-two mothers received assistance with problems relating to the care of their baby from the Correspondence Section.

	1975-76	1976-77
Number of Birth Notifications received ..	1 052	1 228
Number of Circulars posted—		
(No. 1) within reach of a centre	746	702
(No. 2) not within reach of a centre ..	306	526
Letters to Correspondence in response to Circular No. 2	105	115
Letters of advice <i>re</i> feeding and management	473	372
Number of “Care of Mother and Child” sent on request and given	506	149
Number of pamphlets sent advising Immunization	1 052	1 228
Number of Birthday Cards sent during the year	74	54
Number of Telephone Calls <i>re</i> feeding and management	1 840	1 794

HOME VISITING

In Brisbane the 2 home visiting sisters made 3 983 visits to mothers with babies (3 715 1975-76). Such a service is very much appreciated by mothers with small or frail babies or by mothers severely debilitated by the delivery.

In country areas the local clinic sisters made a total of 1 263 (1 196 in 1975-76) home visits to babies not seen at the time of hospital visiting or who had defaulted with an expected clinic attendance.

A total of 38 173 (28 145 country and 10 028 metropolitan—1976-77) newborn babies were visited in hospital compared with 39 297 (28 532 country and 10 765 metropolitan) in 1975-76.

DOCTOR'S BABY CLINICS

A total of 7 543 attendances were made at well baby medical clinics held at Fortitude Valley, West End, Indooroopilly, Wynnum and Woodridge. Of this number 3 005 visits were made to the Consultant Clinic at Fortitude Valley where in addition 4 073 mothers were advised by telephone.

PRE-SCHOOL HEALTH SERVICES

Clinics are held at 25 metropolitan centres, 10 country centres and at 24 kindergartens some of which are visited twice a year. In the metropolitan area, 2 597 new patients were seen and an additional 3 339 subsequent examinations were made. In the country there were 1 083 new patients and 871 subsequent visits were made.

ABNORMALITIES AND REFERRALS FOR TODDLERS' CLINICS

METROPOLITAN	1975-76	1976-77
Knock Knees	442	449
Flat Feet	837	737
Bowing	99	41
Intoeing	195	225
Overlapping Toes	2	2
Round Shoulders .. .. .	..	2
Clicking Hips .. .. .	..	1
Scoliosis .. .. .	..	2
Lordosis	2	1
Funnel Chest	4	5
Small Statue .. .. .	..	2
Bat Ears	1	2
Unusual Gait .. .. .	..	2
Slow Milestones .. .. .	..	2
Enlarged Breast Tissue .. .. .	..	1
Spleen Enlargement .. .. .	..	1
Cardiac Murmurs	131	173
Squints	57	73
Otitis Media	67	65
Conjunctivitis	14	10
Ptoxis	2	2
Urti	19	73
Seborrhoea .. .. .	..	3
Caries	26	16
Stained Teeth	13	4
Tonsils and Adenoids	1 157	1 682
Geographical Tongue	5	11
Malocclusion	10	14
Hydroceles	25	11
Hypospadias	3	7
Undescended Testes	31	12
Phimosis	2	3
Rashes	130	151
Allergies	18	30
Impetigo	3	19
Interigo	2	2
Paronychia .. .. .	..	2
Psoriasis .. .. .	..	1
Alopecia .. .. .	..	2
Ring Worms	3	4
Warts	3	3
Moles .. .. .	..	3
Birth Marks	23	39
Haemangioma	8	9
Dermatitis	2	1
Bronchitis	16	6
Asthma .. .. .	..	3
Rhinitis	1	3
Stridor .. .. .	..	1
Inguinal Hernias	2	4
Umbilical Hernias	151	103
Rectal Prolapse .. .. .	..	1
Labial Adhesions	16	17
Anal Fissures	1	4
Tooth Enamel Deficiency .. .. .	..	1
Obesity	1	2
Sebaceous Cysts .. .. .	..	3
Thalassemia Minor .. .. .	..	1
Molluscum Contagiosum	1	2
Haemoglobins and Smears	207	213
Micro Urines	30	52
Congenital Hearts	3	17
Eczema	68	..
Tachycardia	1	..
Blocked Tear Duct	1	..
Gastro Enteritis	2	..
Behaviour Problems	3	..
Internal Rotation of Hips	2	..
Enlarged Glands	361	..
Wide Epicanthic Folds	5	..
Retarded Milestones	2	..
Enuresis	2	..
Hydrocephalic	1	..
Spider Naevus	1	..
Papaloma	1	..
Pityuiasis Alba	3	..
High Palates	3	..
Referred to Specialists	241	256
Referred to Dentists	21	15
Referred to Speech Therapists	24	26
Referred to Child Guidance	15	18
Referred to Acoustic Laboratory	10	64

COUNTRY—

Knock Knees	48	77
Flat Feet	49	46
Bowing	17	24
Intoeing .. .. .	..	86
Webbed Toes .. .. .	..	4
Curvature of Spine .. .. .	..	3
Curved Toes .. .. .	..	1
Pidgeon Toes .. .. .	..	1
Umbilical Hernias .. .. .	..	65
Inguinal Hernias .. .. .	..	3
Heart Murmurs .. .. .	..	59
Everted Costal Margin and Depressed Sternum .. .. .	..	1

ABNORMAL AND REFERRALS FOR TODDLERS' CLINICS—continued

COUNTRY— <i>continued</i>	1975-76	1976-77
Squints	12	14
Conjunctivitis .. .. .	..	3
Ptosis	3	2
Blocked Tear Ducts .. .. .	..	6
Otitis Media	12	9
Poor Eye Sight .. .. .	..	1
Coryza .. .. .	..	1
Asthma .. .. .	..	3
Mumps .. .. .	..	2
Urti	9	9
Hydroceles	3	11
Undescended Testes	8	6
Hypospadias	1	1
Naevus .. .. .	..	7
Tonsils and Adenoids	22	17
Round Shoulders	8	2
Obesity	5	10
Tinea	5	1
Bronchitis .. .. .	..	2
Geographical Tongue	2	1
Dermatitis	2	1
Impetigo	8	4
Urticaria	1	5
Interigo	5	6
Prickly Heat .. .. .	..	18
Grass Allergies .. .. .	..	4
Sunburn .. .. .	..	6
Rashes	9	15
Eczema	13	5
Petit Mal .. .. .	..	1
Sterno Mastoid Tumour .. .. .	..	2
Anal Fissures .. .. .	..	5
Pilo Nidal Sinus .. .. .	..	1
Mollusca Contagiosum	2	1
Pharyngitis .. .. .	..	1
Oral Thrush .. .. .	..	2
Caries of Teeth	1	1
Enamel Defect of Teeth .. .. .	..	1
Slow in Standing and Walking	1	1
Infected Insect Bites .. .. .	..	1
Milk Allergy .. .. .	..	2
Swollen Left Breast .. .. .	..	1
Gingivitis .. .. .	..	1
Enlarged Cervical Gland .. .. .	..	1
Delayed Speech .. .. .	..	2
Overlapping Toes	3	..
Warts	2	..
Cardiac Murmurs	86	..
Referrals to Dentist .. .. .	..	19
Referrals to Ophthalmologist .. .. .	..	2
Referrals to Doctors	113	121
Referrals to Hospital .. .. .	..	6
Referrals to Acoustic Laboratory	3	4
Referrals to Speech Therapists	3	2

ANTE-NATAL SECTION

Three hundred and eighty-seven new patients attended Caboolture, Woolloongabba, Inala, Fortitude Valley, Woodridge and Argonaut-Woodridge, making a total of 6 083 visits to the ante-natal clinics which are conducted by the medical staff of the Maternal and Child Health Service. At the Chermside and Upper Mount Gravatt clinics where Dr Kool and Dr Fry conducted ante-natal clinics on behalf of the North Brisbane Hospitals Board, 146 new patients attended, making a total of 1 757 visits. There were 525 attendances at talks to expectant mothers at Woolloongabba, Fortitude Valley, Inala.

A total of 1 011 mothers attending Inala, Woolloongabba, Fortitude Valley, Woodridge, Argonaut-Woodridge and Caboolture were confined in 1976-77. In this group there were 35 Caesarean Sections (3.5 per cent), 5 stillbirths and 6 twin pregnancies.

SPECIAL ACTIVITIES RELATED TO ANTE-NATAL CLINICS

	1975-76	1976-77
Home Visits to clinic defaulters	48	51
Transfers of patients to Maternal and Child Health clinics	329	329
Talks to Ante-Natal Mothers (Woolloongabba, Fortitude Valley, Inala)	653	525
Attendances at film, Fortitude Valley (2-9-76; 2-12-76; 3-3-77, 2-6-77)	98	78
Circular letters forwarded to Expectant Mothers (No. 1)	6 474	5 666
Circular letters forwarded to Expectant Mothers <i>re</i> "The Expectant Mother" book (No. 2)	2 922	2 534
Response to Circular letter	2 046	1 828
Serial letters sent to Expectant Mothers	16 995	14 384
Letters received from Expectant Mothers	221	201
Special letters of advice sent on request	237	221
Copies of "The Expectant Mother" book sent on request	1 917	1 910
Requests from country centres and hospitals for "The Expectant Mother" book	665	3 912
Copies of "Before and After—The Facts and Functions of Childbirth" sent on request	1 988	1 951
Requests from country centres and hospitals for copies of "Before and After—The Facts and Functions of Childbirth"	426	2 173
Copies of Baby Patterns sent	53	46
Copies of Maternity Belt Patterns sent	38	5
Visits to patients at Mater Mother's Hospital	3 613	3 572

TABLE XL
SUMMARY OF ANTE-NATAL PATIENTS

Clinic	New Patients		Subsequent Visits		Post-natal Examination		Transfers		Papanicolau Smears	
	1975	1976	1975	1976	1975	1976	1975	1976	1975	1976
Caboolture	22	34	112	163	7	9	1	5	21	29
Chermside	118	98	890	1 030	76	71	7	1	..	..
Fortitude Valley	94	75	948	733	65	42	5	4	97	61
Inala	243	204	2 055	1 998	109	119	67	101	245	180
Upper Mount Gravatt	36	48	456	457	37	30	2	22	..	..
Moorooka (closed 12-8-75)	10	..	57	..	3	..	..	..	..	..
Woolloongabba (closed 24-9-76)	68	14	526	97	43	6	7	..	69	11
Woodridge	107	46	1 549	1 108	86	57	214	213	108	38
Argonaut	14	14	494	902	30	32	33	107	33	14
TOTALS	712	533	7 087	6 488	456	366	338	453	573	333

LECTURES IN MOTHERCRAFT

During 1976 Mothercraft Lectures were given at 266 schools or homes—

State High Schools	117
State Secondary Department Schools	56
Church Schools	54
State Opportunity Schools and Special Schools	33
Girl's Homes	3
State Primary Schools	3

The State has been divided into regions for ease of instruction. In isolated areas the local baby clinic sister gives the instruction. All the State High Schools with the exception of Bamaga accept the instruction.

Area	State High Schools	State Secondary Department Schools	Church Schools	Opportunity and Special Schools	Girl's Homes	State Primary Schools	Total Number of Schools
Metropolitan	50	4	23	18	3	..	98
South East	12	8	5	3	..	..	28
Darling Downs	12	12	8	4	..	..	36
Central Coast	15	5	..	4	..	..	24
Far North	15	4	8	3	..	..	30
Serviced by Clinic Staff	12	23	10	1	..	3	49
Thursday Island Aboriginal and Islanders Advancement	1	..	..	..	..	..	1
TOTALS	117	56	54	33	3	3	266

1976 STATISTICS						
Total Number of Schools	..	..	..	..	226	
Total Attendance	..	..	..	..	17 755	
Total Number of Successful Students	..	..	..	..	12 339	

TABLE XLI
STATISTICS IN AREA DISTRIBUTION

Area	Number Schools	Attendance	Examination Candidates	Successful Students	Project Book Only	Paper Only	Disqualified
Metropolitan	98	8 436	6 953	5 927	99	757	6
South East	28	1 817	1 539	1 417	18	157	..
Darling Downs	36	1 709	1 495	1 415	29	94	..
Central Coast	24	2 109	1 623	1 190	22	349	..
Far North	30	2 103	1 697	1 439	27	344	..
Serviced by Clinic Staff	49	1 562	1 140	936	28	230	1
Thursday Island	1	19	16	15	1	2	..
TOTALS	266	17 755	14 463	12 339	224	1 933	7

TABLE XLII

	Clayfield		St. Paul's Terrace		Toowoomba		Ipswich		Rockhampton	
	1975	1976	1975	1976	1975	1976	1975	1976	1975	1976
Babies Admitted	196	167	235	228	73	49	157	238	102	48
Mothers Admitted	65	59	112	120	26	15	58	123	44	21
Daily Average—										
Babies	10.8	9.7	14.9	13.7	5.16	3.6	7.2	6.5	5.8	4.0
Mothers	1.01	0.85	3.9	4.3	0.4	0.1	1.0	1.8	0.9	0.6

MOTHERCRAFT HOMES

Emotional problems within families continue to play a large part in the feeding and management problems admitted to the mothercraft homes. During the year the mothercraft homes at Rockhampton and Toowoomba were closed on 31-5-77. The other homes continue to be well used by both mothers and babies.

While the residence for mothers is not being fully utilised increasing numbers are attending as day patients (1 472 feeds were given by mothers at Clayfield Home as compared with 1 271 in 1976: 3 415 at the St Paul's Home compared with 3 039).

SANDGATE HOME

During the year 465 babies and children under 12 years were examined for possible admission to the child minding home at Sandgate. In all, 637 babies and children were admitted and 402 families benefited from care during illness of their mother or guardian. The average duration of stay in the home was 28.1 days.

TABLE XLIII

MATERNAL MORTALITY RATES FOR EACH STATE AND TERRITORY OF AUSTRALIA FOR THE YEAR 1976

	Maternal Deaths	Births	Rate (per 1 000 Births)
Australia	N.A.	N.A.	N.A.
New South Wales	N.A.	N.A.	N.A.
Victoria	9	60 677	0.14
Queensland	5	35 243	0.14
South Australia	1	18 947	0.0528
Western Australia	N.A.	N.A.	N.A.
Tasmania	2	6 702	0.2984
Northern Territory	N.A.	N.A.	N.A.
Australian Capital Territory	N.A.	N.A.	N.A.

N.A.—Not available.

MATERNAL MORTALITY COMMITTEE

During 1976 there were 5 Maternal Deaths. This was disappointing as in 1975 there were no deaths; but it still represents the second lowest rate ever recorded in Queensland. The causes of the deaths were listed as follows:—

Ectopic Pregnancy;
Pre-eclampsia;
Abortion;
Sepsis; and
Cardiac Arrest.

Another 4 deaths occurred in women who were pregnant at the time of death—3 were due to trauma, and one to malignancy.

The Maternal Mortality Committee continues to meet as the need arises. During the year Dr John Cox carried out a survey on Aboriginal Maternal and Perinatal Mortality. To do this he visited many areas of the State (Charleville, Cunnamulla, Mt. Isa, the Gulf Area, the Cape York Peninsula, the Atherton Tableland and Cairns) and investigated hospital and clinic records. A progress report was presented on 2 occasions to a combined meeting of the Maternal Mortality Committee and the Perinatal Mortality Committee and the final report is to be discussed in detail. The investigation highlighted many aspects of care which have frequently been discussed. The main factor would appear to be how to motivate the aboriginal community to seek care for themselves and their children and to carry out advice given. Classical medical approaches would appear to need modification to achieve the desired results.

PAEDIATRIC ADVISORY COMMITTEE

This Committee which was formed in 1975 has met regularly during 1976-77. Many aspects concerning children are investigated and assessed. Reports are made to the Minister of Health on the matters discussed.

PERINATAL MORTALITY COMMITTEE

This committee held meetings during the year. The following bulletins have been prepared:—

Prematurity;

The Pre-Natal Diagnosis of Genetic Disease is still in the process of being printed,

and will be distributed to doctors throughout the State. There was a small increase in the number of neonatal deaths in 1976 as compared with 1975. Reports of individual deaths continue to be discussed in detail by regional hospital committees. Different areas of the State reveal different problems—the Perinatal Mortality Rate remains low in Brisbane but escalates in the isolated country areas. For this reason the committee continues to investigate methods of transport for the neonate. A transportation form introduced 6 years ago by the committee continues to be well used by the medical profession and doctors at base hospitals report that babies are now arriving less distressed after transport.

TABLE XLIV

A COMPARISON OF MATERNAL MORTALITY, QUEENSLAND AND AUSTRALIA

Year	Maternal Deaths		Maternal Mortality Rate*	
	Queensland	Australia	Queensland	Australia
1911 ..	98	615	5.77	5.03
1921 ..	108	643	5.31	4.72
1931 ..	108	650	6.06	5.48
1941 ..	92	490	4.28	3.64
1951 ..	35	203	1.18	1.05
1960 ..	24	121	0.68	0.53
1961 ..	28	108	0.76	0.45
1962 ..	23	83	0.64	0.33
1963 ..	9	64	0.25	0.27
1964 ..	10	75	0.29	0.33
1965 ..	10	74	0.30	0.33
1966 ..	13	66	0.40	0.29
1967 ..	9	53	0.26	0.23
1968 ..	11	68	0.31	0.28
1969 ..	8	44	0.22	0.18
1970 ..	8	66	0.21	0.26
1971 ..	10	51	0.25	0.18
1972 ..	6	33	0.15	0.12
1973 ..	11	28	0.29	0.11
1974 ..	7	28	0.18	0.11
1975 ..	..	13	0.00	0.06
1976 ..	5	N.A.	0.14	N.A.

* Per 1,000 live births.

The Maternal Mortality Committee continues to meet every second month to investigate each death in detail.

MARRIAGES

Registration of marriages in 1976 numbered 16 711 giving a marriage rate of 7.9 per 1 000 mean population. A total of 1 078 persons aged under 18 (33 males and 1 045 females) and 8 614 aged 18 to 20 (2 632 males and 5 982 females) were married during the year. Divorce rate for 1976 was 45.61 per 10 000 mean population, 13.42 for 1975. The increase followed the introduction of the Family Law Bill.

VITAL STATISTICS

Births registered in Queensland during 1976 numbered 35 243 compared with 36 403 in 1975. The rate per 1 000 mean population was 20.5 in 1972, 19.3 in 1973, 18.6 in 1974, 17.5 in 1975 and 16.7 in 1976.

Of the births registered during 1976, 18 005 were males and 17 238 were females, equivalent to 104.4 males for every 100 females.

INFANTILE MORTALITY

Deaths of infants aged under one year numbered 535 comprising 290 males and 245 females compared with 547 in 1975. The infant mortality rate of 15.2 deaths per 1 000 live births was slightly higher than the record low for Queensland (15.0) in 1975.

The rates for the different parts of the State were Brisbane Statistical Division 12.3 and other areas 17.6 per 1 000 live births.

Deaths of infants within the first four weeks of life numbered 407 (217 males, 190 females), equivalent to 11.5 deaths per 1 000 live births.

DIVISION OF SCHOOL HEALTH SERVICES

Director: G. M. S. MAY, M.B., B.S.(Melb.), B.Sc., F.A.C.M.A., to 17th March, 1977.

Acting Director: R. C. BLACK, M.B., B.S.(Syd.), from 18th March, 1977.

Medical Officers:

V. M. O'HARA, M.B., B.S.(Syd.), B.Sc.—Brisbane.

J. G. BYTH, M.B., B.S.(Qld.)—Brisbane, resigned 8th November, 1976.

R. FITZHARDINGE, M.B., B.S.(Syd.)—Brisbane, commenced 8th July, 1976.

R. G. R. SIM, M.B., B.S.(Syd.)—Townsville.

M. T. BAKER, M.B. B.S.(Qld.)—Rockhampton.

G. J. STUART, M.B., B.S.(Qld.)—Toowoomba, commenced 4th January, 1977.

Senior Sister: Miss L. M. McCULLOCH, F.C.N.A.

Doctor Garth May retired on 17th March, 1977, from the position of Director of the Division.

In February, Doctor V. M. O'Hara went overseas for six (6) months on a National Health and Medical Research Council Travelling Fellowship and visited numerous places in Europe and America concerned with the health of children.

The Senior Sister, Miss Lyall McCulloch also had one month's study leave while in the United Kingdom where she observed School Health Services and aspects of Community Paediatrics.

Doctor R. Fitzhardinge transferred to the staff during the year from the Division of Youth Welfare and Guidance. In January, Doctor G. J. Stuart joined as the Toowoomba Medical Officer. He had been working with Psychiatric Services at Baillie Henderson Hospital in Toowoomba for some time and also had extensive general practice experience.

In October, Doctor J. G. Byth resigned to take up a position at the Royal Brisbane Hospital.

Doctor M. T. Baker and Doctor R. G. Sim have travelled extensively in their areas.

UNSUSPECTED PHYSICAL CONDITIONS FOUND

Statistics collected this year are not comparable to those from previous years, due to an innovation in data collection. However, the incidence of most disabilities remains about the same.

In the *Pre-school population* examined, the incidence of unsuspected disabilities was over six (6) per cent which highlights the importance of screening the four (4) year olds. This six (6) per cent does *not* include the children with behaviour disorders, social problems and potential learning difficulties. Defective vision was the most common defect found, closely followed by hearing loss.

In the *Primary school population* examined, the incidence of unsuspected physical defects was nearly six (6) per cent. The incidence of most defects remains very similar to those found in previous years, but there is no doubt that more obesity and orthopaedic defects are being found.

Scoliosis in the 11-12 year age group is causing some concern because of the apparent high incidence. This indicates a need to follow the children with a minimal degree of curvature into the early High school grades to watch their progress during the pre-pubertal growth spurt.

During the Seminar held at the Royal Children's Hospital at the end of January, 1976, School Sisters were alerted to the incidence of children with short stature and as a result, 144 children were referred for investigation of this possible growth anomaly, during the last six (6) months.

TABLE XLVI
DETAILS OF NOTIFICATIONS—PRE-SCHOOLS

—	Metro-politan	Country	Total
Children with defects notified ..	364	222	586
Total defects notified	400	250	650
Defective vision	134	85	219
Other eye defects	31	18	49
Swellings, groin	35	17	52
Othopaedic	3	13	16
Obesity	6	4	10
Heart murmurs	36	17	53
Hearing	104	49	153
Other Defects	15	13	28

TABLE XLVII
DETAILS OF PRIMARY SCHOOL EXAMINATIONS

—	Metro-politan	Country	Total
Enrolment of schools visited ..	94 321	108 920	203 241
Number of children examined fully	21 880	31 287	53 167
Children examined vision only ..	43 539	62 050	105 589
Children examined by Medical Officers	8 876	21 229	30 105

TABLE XLVIII
DETAILS OF NOTIFICATIONS—PRIMARY SCHOOLS

—	Metro-politan	Country	Total
Children with defects notified ..	4,031	5,143	9,174
Total number defects notified ..	4 354	5 699	10 053
Defective Vision	1 230	1 623	2 853
Squints and other eye defects ..	258	410	668
Hearing loss	502	893	1 395
Groin and scrotal conditions ..	226	266	492
Orthopaedic conditions	1 159	726	1 885
Short stature	91	53	144
Skin Conditions	86	173	259
Speech defects and dysphonia ..	42	161	203
Obesity	151	166	317
Colour vision defects	285	463	748
Dental defects	180	428	608
Heart murmurs	81	90	171
Miscellaneous	63	147	310

TABLE XLIX
DETAILS OF HIGH SCHOOL EXAMINATIONS

—	Metro-politan	Country	Total
Number examined vision only ..	2 539	1 906	4 445
Defective vision, unsuspected ..	56	19	75
Squints and other eye defects ..	18	3	21
Number tested with audiometer ..	2 539	1 113	3 652
Hearing defects, unsuspected ..	15	12	27

TABLE XLV
DETAILS OF PRE-SCHOOL EXAMINATIONS

—	Metro-politan	Country	Total
Enrolment of pre-schools visited ..	4 941	4 844	9 785
Number of children examined ..	4 530	4 259	8 789
Number examined for vision ..	4 520	4 229	8 749
Number examined with audiometer	4 263	4 047	8 310
Number examined by Medical Officer	1 992	1 664	3 656

It should be stressed that the above key figures do not give a true account of the work carried out in the schools by the officers of this Division. Apart from screening for physical disabilities, a considerable amount of time is spent conferring with parents, Principals, class teachers, remedial teachers, speech therapists, social workers and psychologists about individual children's problems. In fact, more emphasis is placed on the emotional, social and educational problems of the children than ever before. A more accurate account of this involvement is envisaged for future reports.

The number of parent interviews and consultations continue to increase and this year, 4 957 such contacts were made (Table L). The increase is due in part to the ready accessibility of the parents at the Pre-school examinations, and in fact, it is the usual practice for the School Medical Officer or the School Sister to discuss any condition found with the parent.

TABLE L
PARENT CONSULTATIONS (INCLUDING PRE-SCHOOLS)

—	Metro- politan	Country	Total
Interviewed at school	1 195	1 361	2 556
Home visits	248	228	476
Telephone	662	568	1 230
Letter	321	374	695

Table LI shows the number of children referred to other agencies and a total of 761 were so referred.

TABLE LI
REFERRALS TO OTHER AGENCIES

—	Metro- politan	Country	Total
Social Workers	14	39	53
Appointments—Brisbane Office ..	177	39	216
Paediatric Consultant	21	1	22
Division of Youth Welfare and Guidance	20	13	33
Division of Community Medicine ..	14	30	44
Guidance and Special Education ..	1	22	23
Department of Children's Services ..	6	9	15
Aboriginal Health .. ..	..	40	40
Royal Queensland Bush Children's Health Scheme .. ..	..	181	181
National Acoustic Laboratory ..	58	74	132
Others .. ..	..	2	2

OTHER ACTIVITIES

Officers of this Division were requested to give lectures to students at the Colleges of Advanced Education and students of the Queensland Branch of the College of Nursing; to Teacher Aides; Pre-school teachers and Pre-school advisory teachers; parent groups; School Principal groups; nurses at Teaching Hospitals; the Community Health and Aboriginal Health Nurses; psychologists at the Catholic Remediation Centre; Physiotherapy students at the University of Queensland.

TABLE LIII
AUDIOMETRY

—	Pre-Schools	Primary Schools	High Schools	Teacher Trainees	Teachers for G.M.O.	Total
Number tested with Audiometer—						
Metropolitan	4 263	32 144	2 539	1 547	1 176	41 669
Country	4 047	51 686	1 113	372	172	57 390
TOTALS	8 310	83 830	3 652	1 919	1 348	99 059
Known hearing defects (not notified)	123	1 421	44	..	..	1 588
Hearing defects notified to parents	153	1 395	27	..	..	1 575
Direct Referrals to National Acoustic Laboratory	14	139	..	14	56	223

REPORT ON FAR NORTHERN REGION

Doctor Sim reports that the bald statement of figures ignores the travel involved, the time spent in travel, examination and with the difficulties encountered from time to time in the task of completing these school visits.

For the second year in a row, the monsoonal season was prolonged and particularly high in rainfall leading to difficulties in carrying out planned itineraries, sometimes to being flood

Conferences and workshops attended by School Health representatives included: "Parents and Professionals as Partners" at the Mount Gravatt College of Advanced Education; a two (2) day residential workshop at the University of Newcastle on "Demystifying Community Research Techniques"; a seminar on "Crime-Prone Families" conducted by the Australian Crime Prevention Council; a forum on Health Services held by the Australian Pre-school Association, and a seminar on "Nutrition, Health and the Consumer" arranged by the Division of Health Education.

Radio talks, articles and pamphlets were prepared for the Division of Health Education. Articles were also published in the Pre-school newsbulletin "Links".

Doctor V. M. O'Hara was appointed the Health Department representative on the Advisory Council for Special Education and this involved a great deal of her time. Doctor R. Fitzhardinge replaced Doctor O'Hara temporarily on the Council, when the latter was overseas. Doctor R. C. Black participated in working parties of that Council and also is a busy member of the Red Cross Youth Committee, which has groups in Primary and Secondary schools.

Other involvements have included assisting in curriculum planning for the Graduate Diploma programme in Health Education at the Kelvin Grove College of Advanced Education; and preliminary discussions on proposed new courses at the Mount Gravatt College of Advanced Education.

School Medical Officers and School Sisters in the country districts are also committed to involvement in local workshops and seminars.

IMMUNIZATION

Immunization against infectious diseases has followed much the same pattern as in previous years. Table LII shows the percentage of children who have received Triple Antigen, boosters and protection against poliomyelitis. Smallpox vaccination is no longer advocated as a routine measure.

TABLE LII
INOCULATIONS

—	No. Checked	Triple Antigen	Diphtheria and Tetanus Booster	Polio/Sabin
Metropolitan ..	15 327	13 680	12 078	12 335
Country ..	10 044	8 828	8 291	7 898
Total ..	25 371	22 508	20 369	20 233
Percentage ..	..	88.71	80.28	79.74

AUDIOMETRY

The continued kindness and co-operation of the Psychologist-in-Charge of the National Acoustic Laboratory and her staff is very much appreciated.

Again a considerable increase in the number of children, trainees and teachers screened with pure tone audiometers is shown by an increase from 82 314 last year to 99 059 this year.

bound. Of necessity, therefore, some Sisters were obliged to remain near to their base office and visit schools more usually seen at the end of the school year when country travel is not possible.

With the ever increasing number of Pre-schools in all areas, and with the acknowledged priority they have in the work of the Division personnel, has come a much greater work load. Sufficient commendation cannot be given for

the dedication and enthusiasm the Sisters have, as they strive to complete their usual allotment of schools plus the Pre-school population.

During late August-early September, 1976, Doctor May and Doctor Sim spent two (2) weeks travelling west to Mary Kathleen, north to Normanton and returned via Croydon, Georgetown and Greenvale to Townsville. This trip was designed to complete the Statewide survey on Height/Weight/Age initiated some time ago by Doctor May.

In the latter part of June, Sisters Thomson and Daniels drove from Cairns to Normanton and carried out medical examinations at all schools from Normanton, Kurumba to the Atherton Tablelands. Some of these schools had not been visited for a long time.

Full medical examinations were carried out on 194 students applying for Teacher Trainee Scholarships and 154 examinations of graduating students. Throughout the year it has been necessary to allocate almost every Friday for these examinations and reviews and for Audiometric testing of teachers seeking permanent appointment. Forty-five (45) of these latter were carried out.

A seminar was conducted in the May vacation for the Sisters from Cairns, Mackay and Townsville. Emphasis was placed on special aspects of the medical examination, including a lecture from Doctor Charles Hammond, Regional Geriatrician on heart sounds. The children at the Bush Children's Home, Rowes Bay were willing volunteers in this programme.

REPORT ON THE CENTRAL REGION

Examinations of teacher trainees is carried out twice a year at the Capricornia Institute of Advanced Education.

Liaison continues with many organisations—Education Department, Guidance and Special Education Branch, Community Medicine, Queensland Bush Children's Health Scheme, Aboriginal Health, Works Department, Capricornia Institute of Advanced Education.

There has been an increasing number of referrals of children to School Health office—mainly from teachers, Guidance and Special Education and parents.

During the year, children from the School of the Air were examined for the first time in this district, while they attended camp at Yeppoon.

School Health staff have been invited to address various groups of lay and professional people in the area, on the role of School Health Services.

TEACHERS IN TRAINING

Routine full medical examinations have been carried out on students entering the Colleges of Advanced Education in Brisbane, Toowoomba, Rockhampton and Townsville and Diploma of Education students at the University of Queensland.

Examinations for Superannuation have also been carried out on students completing their courses. In addition various review and referral examinations have been undertaken. In fact, involvement with these students is a continuing process throughout the whole year now.

As in former years part-time Medical Officers and temporary Sisters have been employed to assist with these examinations. Without their valuable assistance the task would have been prolonged.

Referrals to specialists and other agencies resulting from these medical examinations are made when indicated.

DIVISION OF PSYCHIATRIC SERVICES

Without doubt the major achievement within the Division of Psychiatric Services during 1977 was within the field of the care of the intellectually handicapped person. Two major events of great importance took place. The first was the introduction of a residential training programme for Residential Care Workers. Residential Care Workers constitute a new caring profession for the intellectually handicapped and the educational programme is conducted at an Advanced College of Education for three academic semesters. The course is at Associate Diploma level and following each academic semester the student is placed in a training centre to gain field experience together with on-going academic content.

The Residential Care Worker will be involved in the development of the capacities and skills of the intellectually handicapped person in the broadest possible sense. Their

training will fit them to understand the objectives of psychology, occupational, speech and physio therapy and to implement programmes designed by experts in those professions. The Worker will also be capable of designing and implementing programmes for social and occupational living.

The other major advance during 1977 was the official opening of the Basil Stafford Training Centre redevelopment scheme and the new villa complex. Thus, 1977 saw the commencement of both functional and structural innovations in regard to those intellectually handicapped who require residential care.

The reorganisation of the Division of Psychiatric Services envisaged in the last annual report has not yet been achieved. However, progress has been made in respect to organisational planning for the Intellectual Handicap and Alcohol and Drug Dependence Services.

OFFICE OF THE DIRECTOR OF PSYCHIATRIC SERVICES

Director of Psychiatric Services: G. S. URQUHART, M.B., B.S.(Qld.), F.R.A.N.Z.C.P., D.P.M.(Melb.).

Deputy Director of Psychiatric Services:

N. C. CONNELL, M.R.C.S., L.R.C.P., F.R.A.N.Z.C.P., D.P.M.—Until 3-9-76.

C. K. BRENNAN, M.B., B.S.(Qld.), F.R.A.N.Z.C.P., M.R.C.Psych.(Eng.), D.P.M.(Melb.)—From 15-11-76.

Chief Psychologist: J. C. WINSHIP, M.A., B.Ed., M.A.P.S.

Senior Social Worker: T. A. HARWOOD, B.Soc.St., M.Pub.Ad.—Until 9-7-76.

Administration Officer: R. K. POPE.

During 1977 the Deputy Director of Psychiatric Services, Dr N. Connell, took up a clinical post at the South Brisbane Psychiatry Clinic and Dr C. K. Brennan, previously Psychiatrist-in-charge of The Prince Charles Hospital Neuro-Psychiatry Unit and Deputy Medical Superintendent of The Prince Charles Hospital, was appointed Deputy Director of Psychiatric Services.

The Senior Social Worker, Mr T. A. Harwood, resigned to take up duties with a voluntary organisation and the vacant position has not yet been filled.

During this year the rotational training scheme for registrars in psychiatry was finally put on a firm basis. This programme which has been an objective of the Division of Psychiatric Services for many years and had been partly implemented by an ad hoc interchange of medical staff between certain hospitals has now been regularised and all psychiatry registrars appointed to the metropolitan hospitals will be given the opportunity of rotating through the broad spectrum of services offered by the integrated psychiatric services in the metropolitan area.

Although recruitment of psychiatry registrars has improved, establishments are not completely filled. What is of greater importance is that specialist psychiatrists, particularly well experienced psychiatrists, are not available for full-time service and it has been necessary to mount a recruitment campaign from outside this State. These experienced specialist psychiatrists are critically important to the provision of adequate service facilities, and the supervision and teaching of trainee psychiatrists.

During the year officers of the Director's office have paid particular attention to the matter of the mental health of Aboriginal and Islander persons. In particular consideration has been directed towards the selection and training of indigenous persons for specific roles in the delivery of mental health care. This work has been carried out in association with the Aboriginal Health Programme of this State.

During the latter part of the financial year additional finance became available and the opportunity was taken to further the works programme in regard to the villa concept

by the construction of 11 homes to be used for the residential care of intellectually handicapped persons. Four of these homes have been built in Toowoomba and Maryborough, two in Rockhampton and one in Ipswich. This project was one which was able to be completed because of the co-operation between the Department of Health, the Department of Works and the constructing authority.

1977 has seen a significant increase in the number of professional staff available and as a result the number of vacant posts in the fields of social work, psychology, occupational therapy and physiotherapy are pleasingly small.

Industrial relationships and negotiations have played an important part in the activities of the Office during the last twelve months. It is with a great deal of satisfaction that negotiations with the Hospital Employees Federation, the Professional Officers Association, the State Service Union and the Australian Workers Union resulted in the determination of a new Award for the new caring professions in the field of the intellectually handicapped by consent. The enormous contribution made by members of the Department of the Public Service Board and the industrial officers of that Department is acknowledged.

Another historical development that has come to fruition during 1977 is the appointment of a Patients' Friend at Wolston Park Hospital. This concept, based on the practice of patient advocacy in some American states has been introduced as a pilot scheme within the major psychiatric hospital of this service. The Patients' Friend, assisted by other officers, will be responsible for free communication with patients to ensure that their legal rights and their human rights are considered paramount at all times. In accomplishing this goal, it is anticipated that clearer communications will be established between patients and the hospital authority, between patients and their relatives, and between patients and the community at large. The Patients' Friend will relate to the hospital authorities but will be directly responsible to the Minister for Health. The appointee will be responsible for the monitoring of the work done by this new office and for its evaluation. The situation will be reviewed during the forthcoming year with a view to the continuation or extension of the concept.

RESEARCH AND EVALUATION UNIT

Officer-in-Charge: J. W. BROWN, B.A., M.A.P.S.

This year has seen further development and consolidation of the role of the Unit. Involvement in ad hoc research projects has been higher than in any previous year, with the Unit participating in a variety of projects both in conjunction with other Divisional staff and independently.

During the year, the Unit has released a guide to psychiatric hostels and other accommodation in Brisbane and Ipswich. This report was the result of a survey of accommodation used by discharged patients. The survey was conducted jointly by the Unit and the Stones Corner Psychiatric Clinic. A second report has been prepared covering the organization of psychiatric after-care and this should be released shortly.

The Unit has also been involved in organizing and processing a census of Wolston Park Hospital and in providing data on the use of psychiatric facilities in Brisbane generally. This exercise is essential to the planning of new facilities for the metropolitan area.

There has also been considerable involvement in the area of Aboriginal mental health and the service needs of Aborigines, and in reviewing data on the use of both prescribed and non-prescribed medication.

The Unit maintains an active interest in the area of health services evaluation, which is reflected in its research and its involvement with Divisional staff. The Unit was represented at a national seminar on health services evaluation in May. Such occasions provide a most welcome opportunity to exchange ideas and develop new perspectives.

The mental health statistics collection has been expanded during the year. Further development is imminent, as provision has now been made for the appointment of a systems analyst and an additional statistics clerk. Changes in the system are urgently required to meet both local needs and national requirements. This year three statistics bulletins have been released concerning in-patients.

WOLSTON PARK HOSPITAL

Medical Superintendent: H. W. B. EASTWELL, M.B., B.S.(Qld.), D.P.M.(Syd.), F.R.A.N.Z.C.P.

New Activities Centre

The new Therapeutic, Educational, Recreational and Activities Building (Thera) was opened on 5th November, 1976, by the Minister for Health. This attractive brick building is conveniently situated near the main admission wards. The auditorium is used for diversional therapy by groups of patients from one large admission ward. Groups of newly admitted patients attend with an accompanying nurse. A second large room is used by the occupational therapist. A third room is used by a recreational officer for his pottery class. The new library occupies one corner of the building. It has been upgraded to meet the standard required for nurse training and also for the training requirements of specialist psychiatrists.

Activities Centre: Cameron House A

The ward Cameron House A was closed for purposes of accommodation and the patients relocated in other wards. It housed fifty long-term patients. This large building is now used for occupational therapy with patients from long-stay wards. Previously there was a restriction on the space available for these activities. Needlework, woodwork and industrial therapy are all under the one roof. This leads to a more efficient usage of the nursing staff supervising these therapies with a reduction in the amount of overtime necessary. The patients attend in groups, often from wards some distance away, and each group is accompanied by a ward nurse. This arrangement enhances staff-patient interaction. Each day over one hundred patients make use of the building from 8.30 a.m. to 3.30 p.m. The office of the nurse who assesses the work performance of patients and who places them appropriately is conveniently located in this building. The space available for the hospital's local news sheet "The Colony Times" has been increased and is located on a verandah in this building.

Demolition of Ward F 10

This old ward was demolished in November, 1976, together with the adjacent building used by the recreation officers. The construction of the new hospital ward has now begun on this site. The recreation officers are using the Recreation Hall as their headquarters, a reorganisation that leads to greater use of the hall and more space for the storage of recreational equipment.

New Admission and Treatment Complex

Work on this large project continues. The buildings are nearly completed except for interior fittings and this is more or less in accordance with the expected schedule for completion. An inter-disciplinary committee has been planning this unit's function over recent months.

High Rate of Bed Utilization

At the present time, the hospital has very few spare beds for either males or females. With only twenty-five empty beds, the occupancy rate can be expressed as ninety-seven per cent. This level has applied for much of the year. One disadvantage of such high rates of bed occupancy is that newly admitted patients must be accommodated where a bed is available and this is not always in the most suitable

location. However, with the availability in the new financial year of the new Gailes Admission Complex, very considerable relief should become available and enable more satisfactory utilisation of Wolston Park Hospital facilities.

High admission rate

The overall number of admissions is substantially higher than one year ago—by a factor of ten per cent. It is thought that economic pressures in the community are partly responsible and no immediate decrease in the admission rate is anticipated until other early admission facilities are opened in the near future. The medical staff are kept busy with the assessment and treatment of new referrals. There is still a relative degree of high occupancy in some wards and the high admission rate has prevented the gradual reduction of beds as planned, though this should be achieved with the development of other facilities. On 30th June, 1977, the number of patients in the hospital was 1097—only three fewer than one year previously.

Hostels within the Hospital

(a) *For Women.* There are female patients who have not succeeded in hostels within the community. To cater for their needs, and to reduce the effect of institutionalisation, a hostel has been created in the old sewing room building. It houses eight patients without direct supervision by nursing staff. Independence and responsibility is encouraged in the patients. They attend meals in the cafeteria in a group which is healthy and natural.

(b) *For Adult Retarded Men.* An unused medical officer's residence was converted into a hostel for eight men. All have the chance of discharge to an outside hostel within the community and this is an ideal training situation. This unit is run as an annexe of a ward for retarded males—Anderson House. A much more individual environment is thus provided.

Vacation of Repatriation Pavilion C

This ward has been vacated to enable renovations to proceed and these are well under way, the patients having been moved to Lewis House D as a temporary measure.

Patient Census

For the second year in succession, a full patient census was taken as soon after 30th June as practicable. The information from this last census will be compared with that of the previous year. A valuable monitoring of trends in the hospital patient population will result. Already the trend for an increase in the number of geriatric patients is apparent. Planning for these patients is now being given priority. The Census is a practical tool for highlighting patient treatment needs—from the data the location of patients in need of speech therapy or physiotherapy, for example, can be seen. The possibility that the needs of an individual patient are forgotten—always a possibility in a large institution—is markedly reduced.

The Industrial Therapy Unit, Inala

This sheltered workshop is finding difficulty in maintaining output because the number of patients attending is gradually diminishing. This is because the extra financial reward involved has not kept up with the general inflation rate. It now fails to motivate patients to work when they are already on pension benefits. Also the patients attending the Industrial Therapy Unit are less able-bodied than they were a year ago. Nowadays only ten patients attend on most days (previously thirty attended). Accordingly, discussions with the management of Industrial Therapy Unit have been held and enough patients are now employed in the Unit to make a profit.

Hospital Fete

The fete each July continues to supplement funds available for patient amenities. As well as providing a day of fun, the fete occurs on a target date and the patients of each ward must organise themselves to produce handicrafts by this date. Forethought and planning, traits which tend to atrophy in institutions, are reinforced. Patients from Challinor Centre and Baillie Henderson Hospital visit by bus.

Staff Retirement Evenings

A presentation to retiring staff (or resigning staff, who have served for over twenty years) takes place at an evening function in the Hospital's ballroom every six months. These functions are quite well attended and serve to enhance staff morale as well as providing a fitting tribute to long-serving staff.

The Hospital as a training institution

The Hospital is popular with fifth year medical students who take up residence for their psychiatry term. They live in a disused nurses quarters and this gives them opportunities for observing the after-hours practice of psychiatry.

Week-end Postgraduate Course in Psychiatry

For the past two years a weekend seminar on modern psychiatric methods was held. They were of particular interest to Brisbane doctors studying psychiatry. Because they took place in the early part of each year just before the examinations for specialist qualifications, half a dozen student psychiatrists from southern capitals attended on each occasion.

Aboriginal Patients

In May a special team interviewed all Aboriginal patients in the Hospital to ascertain their special needs. It was found that most had few friends or relatives in Southern Queensland, making pre-discharge leavetaking relatively difficult. Also greater difficulty in making discharge arrangements occurred than among non-Aboriginal patients. These problems are receiving additional consideration by all members of the treatment team.

Admission and Reception Centre

Newly admitted patients are now assessed in a suite of offices outside MacDonnell B Ward. The patients are examined here by the duty medical officer. It is manned by experienced nurses who arrange the time of admission with the referring agency. This unit also has up to date information on where the vacant beds exist in the hospital. Without this unit we would have greater difficulty in operating with such a high level of bed occupancy, as mentioned.

After-care Liaison Nurses

These eight nurses help maintain discharged patients in the community. They also arrange hostel placements for patients. They supervise the medication of certain patients and call for medical assistance if the patient is not well adjusted. They work in close consultation with the professional staff of the Mary Street Clinic and the Stones Corner Clinic.

Nursing Staff (General)

All positions for non-classified nursing staff have been filled for the first time and resignations are at a much slower rate with the annual turnover of nurses much reduced. There is a waiting list at present for both registered nurses and nursing assistants.

In-service education for nurses is now well accepted and is conducted under the auspices of the Nurse Training School. In addition, forum sessions or workshops take place—specific groups of nurses (such as nursing assistants) gather together to work towards solutions for perceived problems within the hospital.

Paramedical Staff

(a) *Social Work Section.* There are sufficient social workers for one to be permanently allocated to each section of the hospital, with the exception of the chronic wards. The social workers and the After-Care Nurses co-operate in the placement of patients. Newly employed in this section are the new group of Social Work Associates. These young people ensure payment of the pension benefits and welfare payments to which patients are entitled. This staff section within the Hospital is making a very real contribution to the professional services.

(b) *Speech therapy.* These young professionals make an important contribution to patient training on a one-to-one basis. They are mainly used with mentally retarded males who have hope of placement in outside hostels. The pronunciation and general speech capabilities of this group has been noticeably improved.

(c) *Bibliotherapy.* Books and magazines are distributed to all wards by one of the special teachers. They are donated by the Brisbane City Council Library Service. Bookshelves have been provided in all wards. This project is valuable for reducing institutionalization. A daily reading class is conducted by this teacher with patients from Anderson House.

Managerial, Maintenance and Service Division

In recent months the exteriors of five wards have been painted. In addition, the interiors of four other wards have been painted. A clean, bright interior is a booster to the morale of staff and patients alike.

New staff amenities facilities for artisans have been completed over the electricians' shop.

The airing court of Ward Dawson House C has been completely covered with concrete in an effort to reduce the infestation of hookworm which is endemic in this ward.

All of the main hospital roads have resurfaced lately.

The new trees planted last spring all survived the dry summer. A great number of additional trees have been planted in recent months. The grounds should continue to be a showpiece as a result of these initiatives.

BAILLIE HENDERSON HOSPITAL

Acting Medical Superintendent: B. PARK, M.B., B.S.(Qld.), until 1-8-76.

Acting Medical Superintendent: E. TAN, M.B., B.S., D.P.M., M.R.C.Psych.(London), from 2-8-76 to 31-3-77.

Medical Superintendent: J. RIDLEY, M.B., B.S. (London), M.R.C.Psych.(London), from 1-4-77.

This Hospital has benefited by the arrival of medical staff to ease the severe shortage which existed at the close of the last financial year. Dr A. M. Chardhary, Psychiatrist; Dr J. Donnelly, Medical Officer; Dr T. B. Sadler, Medical Officer; took up duty and Dr J. Ridley, the new Medical Superintendent, arrived from England, and commenced duty from 1st April, 1977.

There have also been staff appointments in other professional disciplines, i.e. dentist. The position of engineer has also been filled.

At the present moment, Baillie Henderson Hospital has a greater number of paramedical staff than it has had for three years. There is still a very great need for occupational therapists, particularly in the Assessment Area and Community Preparation Programme.

There has been little change in the duties of the two psychologists currently employed. There has, however, been some increase in the number of patients referred for individual therapy and assessment. One psychologist has also been involved in assessing patients for the intellectually handicapped

wards. The assessment area is still functioning satisfactorily and has assessed a total of 110 patients over recent months. These patients have been assessed for suitability for the Community Preparation Programme and craft areas and as part of a general assessment of the capabilities of patients in the lower level functioning wards.

Two recently graduated social workers have been appointed this year. A major task at this stage is the development of an efficient and defined social work role due to the lack of social workers over the past year and to the necessity of the welfare staff filling this hiatus. The latter staff (2 registered Nurses and a Recreation Officer) have coped conscientiously with this task, particularly considering the lack of social workers with whom to consult. As well as their routine workload, which often has involved trips to outlying areas and some work in their own time, they have assumed a role within Karakan Hostels which is worthy of note.

The social work staff serve on the Auxiliary Services Committee, which is a committee that has been developed to facilitate voluntary assistance in the hospital. The aim of this committee is to create a bridge between the hospital and the community. Not only is it concerned with helping the patients to be rehabilitated and live in the community, but it is concerned with bringing the community into the hospital in the form of voluntary agencies. Mrs Mavis Jones, a Recreational Officer, is the co-ordinator of this committee. She is concerned with speaking to groups and individuals in the community about voluntary assistance and the areas in which they may wish to become involved. At present, there is a list of twenty-one (21) individuals who have volunteered their services to the hospital and a large number of community groups who have expressed an interest. The committee is concerned with the formulation of policy for the service, and with providing those individuals and groups who volunteer their services, with a support system.

A co-ordinating and experimenting scheme has been set up whereby student nurses are involved as leaders of small, high contact groups. The aim of this is to see if nurses can be used in this way with minimal consultative and demonstration sessions from the social work staff. This involves times for discussion and supervision in the weeks when the group is operating.

A physiotherapist was employed for the first time at this hospital. She has coped very well with the difficulties of setting up an entirely new section. At this stage her major involvement is with residents from the handicapped population and the Hospital Ward. Another important function has been in providing consultation to recreation officers, the teacher and voluntary groups.

A speech therapist has been employed in this period. Her professional problems are similar to those of the physiotherapist in that she had to begin a totally new service. At present she is involved in language and articulation work with the intellectually handicapped and brain damaged residents and with language stimulation groups for institutionalized patients.

The school teacher and her assistant are at present carrying out a general school programme for a small group of residents in need of remedial education. A play group for severely and profoundly handicapped patients is also held, as well as special programmes for individual patients e.g. mothercraft.

Another major event was the completion and handing over to the hospital of the wards for intellectually handicapped persons. In addition to providing further modern ward accommodation, it has enabled the Nurses Training School to be established in one central area, and the operation of modern educational facilities for hospital residents.

Improvements continue in other areas with demolition of the old kitchen and laundry buildings which were vacated some time ago and their removal will lead to the building of further projects for the benefit of patients. Recent months has seen further projects underway to improve the appearance of the hospital and provide the best possible conditions for our patients.

These include in the centre of the hospital complex the provision of a gymnasium and swimming pool in the area formerly occupied by the kitchen/laundry.

Through the availability of additional funds, further work was able to be undertaken at the hospital and the erection of a boundary fence, provision of a staff car park, all-weather surfacing of tennis courts, painting of wards, residences and covered ways, have certainly improved the hospital landscape and facilities.

Also, interior painting and provision of further fire protection are some of the ward improvements and the laying of carpet tiles in certain wards has done much to better the living conditions of residents.

Community Preparation Programme

This programme has been re-established over the recent months and has been put under the supervision of a registered nurse. The programme is housed in the school area and is aimed at providing concentrated training in the basic skills necessary for functioning in the outside community. Prior to coming to the Community Preparation Programme, all patients are first considered via an assessment system to determine their particular problems and needs. It is envisaged, however, that the programme will move to a more extensive and convenient ward area in the near future. At present an average of 11 patients attend the Community Preparation Programme daily, and 8 patients have successfully passed through the programme to the community over a recent 3-month period.

The recreation officers have continued to provide a valuable service in the activation of residents. The most significant change since the previous report has been an increase in the number of patients covered by the recreation officers, e.g. the craft area has increased by 58 patients per week and the music area has extended its usual ward programmes to include training used for the annual concert. This year the concert will be presented in the city during Handicapped Persons Week.

The woodwork area has problems in running to its full potential. A major reason for this appears to be the lack of patients in the hospital who can cope with woodwork without a fair degree of training. Patients who are capable are usually short-stay. To meet this problem, it is planned to encourage discharged patients to return from the community to work in the area.

The Liaison Nurses service was set up to cover the vital area of patient placement and follow-up after care. The benefit of their work has allowed more patients to be discharged and then remain out of hospital for a longer period. The patients have received support counselling during the crucial time of adjustment to community life. They also have been more readily received by the community because of the service provided by the hospital.

A notable feature has been the co-operation between the two professions and the efficient interchange of information on particular cases.

There has been a continuing trend in reducing the patient population of the wards. Though there has been a decrease in patient population and bed occupancy, the nursing care per patient has necessarily increased.

A census taken in May indicates 355 patients were resident in the hospital over 10 years.

Of the 726 patients on 17th August, 1976, 269 were in some way intellectually handicapped.

Patients Interaction with the Community

Twenty-four patients attended the special meeting at Raff Street Methodist Church. 157 patients attended the Too-woomba Show. 56 patients attended the play "Wizard of Oz" played by Harristown High School. 58 patients attended the Musical "Bye Bye Birdie" at Toowoomba High School.

Groups of four patients have been going to the homes of various auxiliary members monthly. Brownies and Guides visited Hill House and gave a short concert and supplied afternoon tea to the elderly ladies. A nurse and teacher on holidays from India visited the hospital and spoke to groups of patients. Downlands College visits occur weekly from a group of high school students. The Darling Downs Institute continues to use the hospital as a venue of experimental training for education and behavioural science students. Groups of patients have attended all major football matches. In the main these patients would not have any outside contact.

MOSMAN HALL

Regional Psychiatrist, Townsville and Medical Superintendent, Mosman Hall: I. ATKINSON, M.B., B.S. (Melb.), D.P.M.(Melb.), M.R.A.N.Z.C.P.

Physical Environment

This has been improved in detail to some extent in different areas. For example, a concrete path has been laid between the Occupational Therapy Unit and the back of D Ward, a process which will make movement between these areas much easier, particularly in wet weather. The drains in C Ward are being repaired and much rewiring has gone on throughout the Hospital.

In some areas in the hospital, particularly M and F Wards, vinyl floor coverings have been laid and will soon be carried out in C Ward.

Organisation of the Hospital

1. *Within the hospital*—D Ward has been changed in status from a closed ward to an open ward in which the patients are now pensionable.

About 50 per cent of the patients are usually entirely free to come and go from the ward as they see fit. Unfortunately many of the patients have as a result of their Korsakoff's Psychosis, severe short-term memory losses and would get lost if permitted to wander away from the ward.

Most of the patients in this ward now have their own wardrobes and own possessions at all times.

2. *Outside the hospital*—This is now somewhat different, in that the professional services within Charters Towers are being rationalised, in that when available social workers, occupational therapists and physiotherapists within the organisation may be employed by one unit, but will serve in the other establishments in the town co-ordinating social work programmes, occupational therapy programmes and so on. Another development in organisation in North Queensland which affects the input into Mosman Hall of patients is the establishment of a psychiatric ward in Mackay Base Hospital under the supervision of Dr Peter Field. This provides an early treatment centre which should considerably limit the need for the transfer of the majority of patients with psychiatric problems out of Mackay and therefore result in fewer admissions to Mosman Hall.

In late 1977 it is anticipated that a full-time psychiatrist will take up duty at Cairns Base Hospital. This will give another early treatment centre for psychiatric patients and should reduce the number of patients likely to be transferred to Townsville General Hospital and/or Mosman Hall.

Staff

This has not changed significantly in the last year. The hospital still remains short of establishment of paramedical staff, whilst the number of patients has not increased or varied significantly. The type of patient is changing in that the absolute numbers of schizophrenic patients is tending to fall due to the effectiveness of the early treatment centres, whilst the absolute numbers of patients with the Korsakoff type of psychosis is, however, increasing.

One result of this is that fewer patients within the hospital might recover to the point where they can be rehabilitated and placed back in the community through hostels. Continuing assessment of patients to find those with a potential to live outside the hospital is going on. These patients are placed in a flat where they are helped to become semi-independent, having to do their cooking, look after their own clothes, medication etc. with a view to developing them to a level where they are able to live in a hostel. This search for such patients is becoming less and less productive, as it should be, as early treatment measures are producing effective early remission.

Community Involvement

Many patients from Eventide are now using the Occupational Therapy facility at Mosman Hall during the day. Some female patients from Charters Towers are also day patients.

The Occupational Therapy Department is still producing many products, selling some \$23,000 worth in the last year. The community is free to come and visit the Occupational Therapy ward and buy or order whatever products it wishes. Mosman Hall had a float in the Goldfields Festival Parade representing the activities at Mosman Hall in Occupational Therapy. A large globe representing the motif of the hospital magazine "Our World" was used on the float. The stall run at the local Show sold some \$850 worth of products. Patients regularly attend sporting fixtures, shows and also the Tuesday meeting at The Spot for Senior Citizens.

The patients are now taking full advantage of the canteen run by the Red Cross ladies three afternoons a week in the hospital. This assists in training residents in the use and handling of money.

PSYCHIATRY CLINIC, 30 MARY STREET

Psychiatrist-in-Charge: P. J. EDWARDS, M.B., B.S.(Qld), D.P.M.(Melb.), M.R.A.N.Z.C.P.

There have been few changes in the major areas of activity of the Clinic since the last Annual Report. The Drug Dependence Unit moved from the Clinic to P.F.C. House on 21-3-1977. A very significant number of man hours is allocated to forensic psychiatry. Apart from work of this nature done at the Clinic itself, two (and sometimes three) sessions per week are given to Brisbane Prison, apart from the two sessions provided by staff from the Psychiatry Clinic Stones Corner.

The Psychologists on the staff continue to provide a very valuable service to patients likely to benefit from treatment using behaviour therapy techniques in both group and individual settings. As in previous years, an undergraduate student in Psychology has been attached to the Clinic for training and experience in clinical psychology.

The Social Workers on the staff have also been active in the management of patients at both group and individual levels. At present two Cadet Social Work Associates are attached to the Clinic for training purposes. Under the supervision and direction of the Social Workers, part of

their activities at present involves a survey of hostel and boarding-house type of accommodation that is already or could be utilized by patients attending this Clinic. A survey of sheltered workshops and activities centres is also being conducted and it is hoped also to survey organisations that could or do provide social club type activities for handicapped people. It is felt that there is a large void in the lives of a significant number of patients attending this Clinic, most of whom would have had several admissions to psychiatric hospitals.

An additional service will be provided to the Department of Children's Services in the future. This will be in the form of a consultation service to Social Workers of that Department who are concerned with the parents of children who have been physically abused by such parents.

With an increase in Welfare Officers to five, it is planned to utilize such staff in the area of community psychiatry as well as in individual and group therapeutic activity with patients within the Clinic.

STONES CORNER PSYCHIATRIC CLINIC

Psychiatrist-in-Charge: G. S. BRIGGS, M.B., B.S., D.P.M.(Melb.), M.R.A.N.Z.C.P.

A comprehensive report on the role and services offered by this Clinic was provided in the previous Annual Report, and there has been relatively little change in the ensuing twelve months. The main problem during this period has been a relative shortage of medical staff. The policy of this Clinic is that every patient who attends the Clinic has a medical assessment by one of the medical staff but medical staff are also often required for urgent professional consultation in crisis intervention situations.

These duties, as well as their other therapeutic activities, underline the need for increased availability of medical personnel.

The Stones Corner Psychiatric Clinic is functioning well and staff morale is high. The Clinic was fortunate to have the services of Dr B. Wiltshire recently. Dr Wiltshire is an experienced clinical psychologist and he conducted planned staff meetings at twelve, one and a-half hour sessions which were designed to give staff further experience of the group process and group techniques and to help communication within the Clinic. The exercise was felt to be very successful and all staff gained considerably from this project.

A new programme has been developed in the present day centre therapy team and is functioning well with often an average day centre attendance of 15 patients per day. All other Clinic activities are proceeding satisfactorily. However, there is still some staff uncertainty about the Clinic's most effective way of fulfilling their community role and considerable thought and planning is occurring in this area.

Some assistance is also given to the Division of Psychiatric Services in regard to clinical work in the forensic field.

The Clinic recently organised a training seminar in transactional analysis for those members of the staff who wished to have this training and this proved very successful and has added considerably to the skills available. There have also been visits from various community agencies and the staff have kept up their liaison with these organisations.

Occupational therapy students attend as part of their training programme and are given training and supervision by the day centre staff. A student social worker is doing a field placement at the Clinic and a student psychologist is also undertaking part-time training at the Clinic.

INTELLECTUAL HANDICAP SERVICES

The implementation of many of the innovative concepts outlined in the Health Paper "The Care of the Intellectually Handicapped" presented by the Honourable the Minister in March, 1976, and advances in planning towards the implementation of still other of these concepts, has made 1976-77 an active and challenging period.

A year of significant development in services for intellectually handicapped persons was heralded by the introduction of a new concept in the training of residential care personnel with the first intake of students selected from existing staff to undertake the Associate Diploma Courses in Residential Care at Kelvin Grove College of Advanced Education in July, 1976. The interest shown in undertaking new training by these staff was encouraging, since this occurred prior to the resolution of the industrial issues associated with the caring profession.

Both the concept of the new caring professions and the associated industrial issues were aired before the Industrial Commission and the Industrial Court in relation to the application for a new Award to cover the new caring profession. This was finally granted, with the parties directed to confer on the details of the Award. It is again encouraging that an Award was arrived at by consent, and this was ratified by the Industrial Commission on 30th June, 1977.

The proposed model of care of intellectually handicapped persons within family-sized "modules" represents a significant change from the former hospital-care model, and a number of meetings have been held at the residential centres and hospitals to acquaint staff both with the concepts and the proposed professional structure in which the concepts will be expressed.

Similarly the Honourable the Minister for Health attended meetings of interested staff at Challinor Centre, Basil Stafford Centre and Wolston Park Hospital respectively to discuss the implications of the new model for staff. At the same time, there has been considerable interest shown by the general public, including a number of requests from people seeking employment and training in the new caring professions.

A second stage in these developments commenced in November, 1976, when the first Residential Care Workers (training) completed their first academic semester and commenced a semester of practicum experience. A model unit was established in a building at Basil Stafford Centre subsequently designated "Melaleuca", with ten children as residents and staffed by the Residential Care Workers (training), with the support of an interdisciplinary professional team. This was extended to incorporate another new residential unit designated "Banksia", which has accommodation for twenty-eight adults, and the employment of the first group of Residential Care Assistants (training) was undertaken to provide an appropriate practicum situation in which both groups of staff might develop practical skills in the first semester of 1977. Concurrently a second intake of students commenced their academic training at Kelvin Grove College.

While concern was focused on the new initiatives in staff training and proposed innovations in the infrastructure of staffing, further initiatives were underway towards the transformation of the physical environment in residential

facilities. The construction of a Villa complex of sixteen houses at Basil Stafford Centre was completed and officially opened by the Honourable the Minister for Health on 20th May, 1977. These two major initiatives in staffing and accommodation are designed to complement each other in a programme of normalization of the social, physical and learning environments of residents.

Occupancy of the first eight of the sixteen houses was planned to take place during June and July, 1977 with the occupancy of the remaining eight houses anticipated in the latter part of 1977.

The co-operation of all professional staff at the Centre and especially of the Aveyron Parents and Friends Association in the introduction of the children to their new accommodation contributed greatly to the success of the move accomplished. The occupied houses were staffed by Residential Care Workers (Training) and Residential Care Assistants (Training).

A most exciting phase of development was entered with the planning and construction of eleven houses in provincial cities on the Villa model established at Basil Stafford Centre. This is consistent with the aim of providing facilities in regional areas, but has met with a mixed reaction from the public because of the siting of these houses in Community settings. This reflects the need for continued education of the public regarding the ability of the majority of intellectually handicapped persons to enjoy a normal life-style within the ordinary community, with appropriate care and training.

A distinction is made between the provision of Villa accommodation with staff rostered on a twenty-four per day to provide care and Training, and the Family Group Home situation in which there are resident house parents.

However this period saw the opening of two family group homes, at Bald Hills, and Ipswich to be added to homes at Ipswich and Lota, administered by the Methodist Special Caring Services Division. A further home at Toombul was opened under the administration of Karakan Hostels. Residents of these homes are children and adults who have graduated from government residential facilities and are able to function within a normal home environment and within the normal community.

A further development toward regionally-based accommodation for the intensive nursing care of bed-fast profoundly handicapped persons was the opening and subsequent occupancy of the Intellectually Handicapped Unit at Rockhampton Base Hospital. Transport of 23 residents of Brisbane and Ipswich centres, whose admission to Rockhampton was considered a more appropriate placement was effected by air. This was organized with the assistance of T.A.A. staff and a ground transport service organised at the Rockhampton end by the Australian Army. This resulted in a comfortable and stress-free trip for the residents and escort staff. A further seven children were transferred by air to Rockhampton from the Disabled Children's Ward Maryborough Hospital. Other residents were admitted directly from the community.

Professional officers have participated with officers of the Department of Works and Consultant Architects has in the planning of the Babies Admission Unit and Nursing Care

Unit at Red Hill, which is now well advanced. This will be known as "Halwyn" so as to perpetuate the name and historical association of the family home which formerly occupied the site. This centre is designed to combine the most up-to-date principles, practice and facilities in the care of the profoundly intellectually handicapped while retaining the concept of family group living, within self-contained units.

The need for the accommodation of professional and administrative support services has been recognized in the renovation of an area of Basil Stafford Centre for this purpose. This area will be occupied concurrently with the establishment of the new caring profession and associated administrative changes at the Centre in September, 1977.

Similarly the Central Assessment Clinic in Brisbane has been functioning within the constraints of limited accommodation for sometime. The provision of clinical and administrative accommodation for the Clinic at Roma Street will enable staff to continue and develop their highly effective service within a more comfortable setting.

A significant step in the extension of clinical facilities to provincial cities and surrounding areas was taken in the establishment of the Toowoomba Regional Assessment Clinic. This clinic has developed into a most effective unit and has assumed responsibility for the regions of Maryborough and Bundaberg, and admissions to the Disabled Children's Ward, Maryborough Hospital as well as to the profoundly handicapped Units at Baillie Henderson Hospital, Toowoomba. The staff have established liaison with community agencies as well as commencing casework. This development has also enabled the Central Assessment Clinic to rationalise the caseload of a regional basis. It is a matter of regret that, to date, suitable staff have not been found to enable the establishment of a Regional Assessment Clinic at Rockhampton.

The coming year will see the culmination of some of the significant developments of 1976-77, with the establishment of the Branch of Intellectual Handicap Services within the division of Psychiatric Services, and the establishment of both the Central office of the Branch and the Central Assessment Clinic in new accommodation in "Biala", 270 Roma Street, Brisbane; similarly this year will see the implementation of

the new model of residential care at Basil Stafford Centre and Challinor Centre coincidentally with the establishment of Basil Stafford Centre as an administrative entity separate from the administrative structure of Wolston Park Hospital and the further extension of the villa concept of residential accommodation and the new caring model into the community in Rockhampton, Maryborough, Toowoomba and Ipswich.

The structure of the Branch of Intellectual Handicap Services has been designed to express three major aims.

(1) the delivery of residential and resource services which reflect expanding knowledge of principles and practices in the care of intellectually handicapped persons and concern for the quality of life enjoyed by the intellectually handicapped.

(2) concern with staff provision to include progressive forward planning with regard to primary training recruitment and subsequent training of personnel and ongoing professional development of all staff; and

(3) the furtherance of coordination in services for the intellectually handicapped and liaison between governmental and voluntary agencies, with particular emphasis on the development of relevant informational resources which will be available to parents, agencies and professional workers.

It is consistent with these aims and an encouraging note for the future of the Branch that throughout the year, officers of intellectual handicap services have been involved in the activities engendered by the wider community concern for the intellectually handicapped, in the consultant and liaison roles fulfilled by the Clinics, participation in a variety of conferences, seminars and research endeavours, and representation on inter-agency and inter-departmental planning committees.

The strength of the developing Service has been in an integrated approach to the problems experienced by intellectually handicapped persons and their families and the relation between the complementary services offered respectively at a community and residential level. The reduced rate of admissions to long-term residential care is directly related to the primary intervention services provided by the Clinics and their use of short-term placement to meet individual and family need. This occurs within the context of a continuum of care which is especially relevant in providing services for the intellectually handicapped.

CENTRAL ASSESSMENT CLINIC FOR THE INTELLECTUALLY HANDICAPPED

Officer-in-Charge: R. N. SHEPHERD, B.A., Dip. Psych., M.A.P.S.

The past year has been a very important one for the Clinic with the development of new services consistent with the innovative approach taken by the Health Department in the treatment and care of intellectually handicapped persons.

The opening of the first regional clinic in Toowoomba has led to Central Assessment Clinic assuming the responsibility for a central register of all clients referred to either clinic. This in turn has led to changes in the clinic's filing and recording systems and a records' clerk has been appointed. This record system will maintain basic information on all clients known to Intellectual Handicap Services.

The Central Assessment Clinic has transferred responsibility for a large number of clients to the Regional Assessment Clinic and has restricted domiciliary contacts to a more accessible area. However, the clinic still maintains responsibility for Central and Northern Queensland and since the opening of the profoundly handicapped unit in Rockhampton, staff visit Rockhampton regularly every three months to advise nursing staff on treatment programmes for the residents and to see families in the surrounding community. This responsibility will be transferred to the Regional Assessment Clinic, Rockhampton when it is established later in the coming year.

The clinic has maintained contact with over 1 100 clients during the past year and some 400 clients were visited regularly in their own homes during that period. Other clients were seen either at the clinic, or in other facilities in the community with which the clinic has a relationship, including sheltered workshops, play groups and residential.

A major change in the operation of the clinic came about in February, 1977, when the first staff training programme for professional staff was commenced with two separate induction courses being run for new staff. Concurrently with the course, all staff members were issued with a folder containing information on routine procedures within the clinic as well as comprehensive information on all government and community facilities relevant to their work. This folder has been augmented and updated by the Acting Community Liaison Officer. The development of both the course and the information folder has resulted in new staff being more quickly assimilated into the clinic and has enabled them to

be more effective resource personnel for clients of the clinic. The induction courses are augmented by the on-going fortnightly learning exchanges held in the clinic where guest speakers and staff members share their knowledge of up-to-date developments within the field of intellectual handicap.

Another important change has taken place in the allocation of staff members to teams within the clinic. From the outset, the clinic initiated the practice of distributing case loads to teams of professionals so that clients could have the benefit of a well-integrated multidisciplinary approach. These teams were organised in terms of the ages of the clients as the needs of infants and young children are very different from those of adolescents and adults. However, the work load with adults had been steadily increasing and it was appreciated that more staff needed to be available to work with this group. Consequently the case loads are now organised so that two teams of professionals work with clients aged 15 years and over and two with infants and children up to 14 years. This has meant a reallocation of the team dealing with children aged 5-16 with a slight increase in the case loads of the teams who formerly dealt with infants up to 5 years. These changes have resulted in an improved service to our adult clients.

The last year has also seen a number of changes in the role the clinic plays within the community. As well as providing a direct assessment and therapeutic service to clients and access to residential placement, the clinic has been functioning more and more as a resource centre for both clients and voluntary agencies. As the clinic maintains up-to-date information about all developments within the field, this information has been passed on to clients through newsletters and parent meetings. The response to this has been gratifying and a number of new ideas have been developed which will be put into practice during 1977-78. These including the provision of a parent-training unit for which premises have been purchased at Stanley Terrace, Taringa, includes a parent-resource library and parent self-help groups.

The help given to voluntary agencies such as Methodist Special Caring Services, W. R. Black Centre, Association for Developmentally Young Children and Mercy Centre for the Handicapped, has included assessment and initial screening of their clients, ongoing therapeutic work in their facilities,

and most importantly staff training. The Clinic this year has been approached by another large voluntary organisation asking for assistance in the above areas similar to that already provided for these agencies. Negotiations are currently under way to assess needs and determine what services the clinic can offer.

This year clinic staff have also offered a consultative service to other government departments and have travelled country areas to consult with staff from Division of Community Medicine and provide them with information on intellectual handicap. Other staff have been involved in teaching in courses for guidance officers, residential care workers, and university students, and in working closely with pre-school advisors to look at the needs of intellectual handicapped children attending state pre-school facilities. Close contact is also maintained with other State and Federal Government agencies including the Department of Children's Services and Commonwealth Employment Services.

New programmes have also been developed over the last year since the appointment of an additional special teacher and a graduate in human movement studies. A number of adult clients are now receiving remedial work aimed at increasing their basic communication skills as well as their literacy skills. This service has proved so popular that a large number of adults have come forward to ask for this help. Recreational activity groups have been developed for both adults and children to improve their physical skills and a large number of clients have now become involved in these programmes. A structured play group for young children is now operating under the guidance of one of our special teachers and is servicing the needs of children in the northern suburbs district. It is planned to establish similar groups in other areas in the coming year.

This year for the first time the clinic has become involved in a major research project. This is a collaborative effort with Dr Paul Berry and Dr Robert Andrews of the

Schonell Educational Research Centre who are looking at mother-infant communication patterns in both normal and Downs Syndrome infants. This work has important implications for early intervention with young handicapped children. It is an exciting new development and it is hoped that research projects of this nature will become an integral part of the clinic's functioning from now on.

Aside from this major project, there have also been a number of smaller research projects ongoing in the clinic over the last year. These have ranged from a survey of medical care available to intellectual handicapped children carried out by medical students, to investigations of social skills programmes for adults by occupational therapy students, to single case studies of behaviour modification techniques by psychology students.

Students have also been involved in the clinic as part of their practical clinical training and have come from the Departments of Occupational Therapy, Social Work, Psychology, and Speech Therapy at the University of Queensland. In addition, Community Welfare students from Colleges of Advanced Education have spent time at the Clinic as part of their training. During the year, students from other disciplines have attended case conferences as have a wide range of professional staff from other agencies.

All of these activities have taken place in cramped surroundings and the purchase of a property at Stanley Terrace, Taringa, which will be occupied shortly, will alleviate acute space problems and allow more new programmes to be developed. In addition, the provision of clinical and administrative accommodation for the clinic at Roma Street will be welcomed.

This year has been an exciting and an extremely busy period for the clinic and it appears that 1977-78 will also see new developments and continuation of existing innovative programmes.

CHALLINOR CENTRE, IPSWICH

During the year ended 30th June, 1977, constructional development within Challinor Centre was highlighted by the commencement of work on the new canteen complex at an estimated cost of \$158,000.00. This building has been designed to provide internal and external dining facilities for residents and their relatives and friends who wish to avail themselves of snacks and light refreshments. Members of the staff will be catered for with the provision of a separate dining room area. Plans include room where official visitors to the Centre may be entertained, and space has been provided for two shops. A kitchen area, scullery, storeroom, cold room, office space, a retiring room for female staff and staff toilets complete the complex. The building is expected to be available for occupation in October, 1977.

Work is well advanced on a mini-golf course and beautification of the surrounds of the recreation oval. Funds for these projects are being financed from money made available by the Government for the relief of unemployment.

A small building for the storage of inflammable materials was also erected during the year.

Plans have been prepared for the proposed Artisans' Workshop complex, construction work on which is expected to commence during the 1977-78 financial year.

Further developmental work is anticipated with the planning of a Staff Training Block, designed to provide facilities for the training of staff, undertaking the courses for the Residential Care Assistant Certificate and the Residential Care Worker Diploma. This complex, with present and other proposed facilities, will ensure Challinor Centre's future as a venue for National and International Congresses in the Intellectually Handicapped field.

The proposed Indoor Recreational Facilities Complex including a heated swimming pool is presently in the planning stage, and it is anticipated that construction work on this project will commence soon.

Whilst other accommodation continues to be upgraded, concomitant with a reduction in the number of residents occupying the areas to allow more personal living and recreational space, residential accommodation has assumed a rightful new proportion with the completion of the villas at Wacol, Toowoomba and Rockhampton, and the completion of a "quarter-villa", i.e. a house for six residents, in the Ipswich community, which will be serviced from Challinor Centre in the immediate future. This heralds the demolition of Dagmar House within a matter of months, and of Blair Pavilion quickly thereafter. It would be unreal to assume that replacement accommodation will not be necessary, and accordingly, villas will be built in their stead.

Of a more technical nature, work is continuing in the construction of a sound proofed audiology testing room fitted with one way observation panel, amplifier and microphones. This will be of immense benefit in the testing of hearing with the pure tone audiometer, and will also serve other clinical observations.

In line with the establishment and training of the new caring profession, composed of residential care workers and residential care assistants, and with two groups, each of 20 students, attending the College of Advanced Education at Kelvin Grove, considerable increase in staff establishment has been necessary during this financial year and will again be necessary early in next financial year. The theme of staff training has been reflected in induction courses for new staff, library services and audiovisual services. The training function previously carried out by the Nurse Educator has been assumed by a lecturing staff consisting of one psychologist, one occupational therapist, and two special teachers with support from other disciplines as required. A total of 18 induction courses, each of one week's duration, were conducted with totals of 167 new staff and nine previous staff being catered for. Members of staff training assist in the selection of new staff in the areas of initial screening of applicants and as panel members when prospective staff members are interviewed.

Seminars for professional staff have continued to be held. Subjects covered have included; The Role of the Professional Staff in the New Caring Profession, The Weed System of Problem Oriented Recording, and Public Speaking.

Two groups of students have been entertained; one group of student nurses from the Ipswich General Hospital and one group of student teachers specialising in the education of intellectually handicapped children. Two of the student teachers requested practicum placement at Challinor Centre following their visit.

Plans for the future include development of library and audio visual services to cater for increasing numbers of both residential care assistants and residential care workers in training. Brief orientation courses will be offered to staff transferring from male and female assistant positions to residential care assistant staff. Induction classes will continue to be held at regular intervals and preparations are being made for the commencement of the residential care assistant course later in 1977.

Late in the year, on 13th June, 1977, a Residential Care Training Unit comprising Byron and Clair Houses started at Challinor Centre. The staff in the Unit consisted of 22 residential care assistants-in-training, 5 residential care workers-in-training, Resource Team members and a Unit Director.

In each of the houses, the residents belonged to one of three modules and three residential care assistants-in-training were assigned to each module on a permanent basis. The function of the residential care assistants-in-training was to provide substitute parent care to the small groups of residents (from 4 to 6).

The residential care workers-in-training and residential care assistants-in-training have co-operated and co-ordinated their efforts to provide a caring and stimulating environment for the residents.

A resource team consisting of a speech pathologist, a special teacher, an occupational therapist, and a social worker gathered information and organized procedures in order to facilitate the change over. They have contributed greatly by providing organizational skills, advice and support to the new staff. Two of the resource team are supervisors to the residential care workers-in-training with respect to the College requirements. The residential care assistants-in-training and the residential care workers-in-training had access to the members of the resource team at all times. The Unit Director, a psychologist, was responsible for the administrative aspects.

Module meetings are held on a regular basis. All members of the staff who are involved with any of the residents in a particular module attend its meeting. Each resident's needs are discussed and programmes are worked out, for both the short and long term. Other matters which would be considered at these meetings would be possible outings, and parent contact. Residential care assistants-in-training help maintain contact with relatives in consultation with resource team members. One of the aims of the staff has been to increase the amount of time the residents spend outside the Centre and outings have been arranged to Lone Pine, Ipswich Shopping Centre, etc.

It was evident even in the brief time between the 13th June, 1977, and the 30th June, 1977, that the residents had benefited from having a consistent staff, each of whom had clear responsibility for a particular group.

An integral part of a 24 hour caring service is the provision of medical and nursing care whenever required. In line with normalisation, Challinor has been conducting a general practitioner morning surgery session, on an appointment system, for residents who are able to attend, and as far as possible, attend without having to be escorted. "Home visits" are made to residents too ill to attend the surgery. An after hours service is also available by the doctor on call with support service provided by the Ipswich General Hospital.

Challinor Centre was fortunate in obtaining in December, 1976, the services of a full-time medical officer, Dr John Gritton, who was recruited by the Director General for Health during his tour in the United Kingdom. The Medical Officer establishment of two is now filled.

The Occupational Therapist establishment of nine averaged only three for the year. This situation was the subject of much serious consideration. It was decided to convert two posts to Recreation Officers, which were quickly filled. During the year, the Occupational Therapists provided a consultative service to the residences and to Staff Training, including lectures, with specific programmes for individual residents and groups of residents. A further three Occupational Therapists are expected to be engaged early in the new financial year.

In association with other professional staff, a holiday scheme for residents was established, with the ultimate aim of achieving the opportunity for residents to have at least one holiday annually. Holidays, ranging from 2 to 10 days, have encompassed coach tours with Traveline and Christian Youth, Safaris to Stradbroke Island, Snowy Mountains, Sydney, Mount Waring Lodge, Tallebudgera, "Camp Cal", and Bribie Island "House of Happiness". The holidays have also been valuable in the training and assessment of residents' potential.

Five female residents were discharged to independent living in a house in the community with minimal supervision and have been accepted well by the neighbourhood.

Six male residents were established in one of the Centre's houses in Parker Avenue with no live-in supervision, for training and assessment for independent community living.

The physical handling programme under Physiotherapist supervision and consultation provides a special service for many of the residents of Charles Pavilion, which accommodates severely and profoundly intellectually handicapped people, all of whom have severe physical handicaps and many of whom are immobile. The residents in the programme are selected after consideration of many factors such as need, potential, prognosis and age. Twenty-three residents attended on a sessional basis and the programme is run by nursing staff who have had some special training specifically for this programme. The programme is also used in staff training, giving the new caring profession an introduction to the handling of multiple handicapped residents.

Through the year there have been visits by Police Cadets, senior school children, student teachers and inter-state visitors.

The Speech Pathology Section has an establishment of 3 posts. For the first half of the year there were two vacancies, but these have now been filled, which is the first time that the Centre has had a full complement.

During the first six months, the speech pathologist had many roles; a member of the school team; a consultant for feeding problems, particularly in Charles Pavilion, involving assessment and thereafter researching and ordering necessary equipment; individual and group therapist; lecturer on feeding problems in staff training; audiologist, with liaison with National Acoustic Laboratory; member of Brochure sub-committee of the Public Relations committee, preparing (eg) Parent Information Brochures.

With the appointment of two speech pathologists in January, 1977, more individual and group work was able to be undertaken in all areas listed above, as well as the preparation of lectures and audiovisual materials for the approaching Residential Care Assistant Course.

The Psychology Section establishment is four posts. However, one psychologist was seconded to Staff Training, a second to the Training Unit at Basil Stafford Training Centre as Unit Supervisor for Residential Care Workers (Training), and in June, 1977, a third was seconded to the Training Unit at Challinor Centre.

Nevertheless, the psychologists have participated in assessment of resident needs and subsequent development of programmes, individual and group, to meet these needs. Greater participation by residents in daily activities, and increased recreational, employment and holiday opportunities have resulted.

The psychologists were given the responsibility for the organisation of staff selection procedures in the Centre. This involves psychological assessment and participation on selection panels.

All psychologists have been involved in development of the Residential Care Assistants Course and/or preparation of materials for the proposed course.

The selection continues to provide a supervisory service for the Psychology Department, University of Queensland.

The school programme operated as in previous years with a multi-disciplinary team until 22nd April, 1977 when it was phased out according to plan. The team of five comprised a special teacher, speech pathologist, occupational therapist, social welfare cadet and a member of nursing staff.

The Aims of the school programme were—

- (1) To promote independence, acceptability and happiness by developing communication, co-operation, work habits and attitudes, physical fitness and co-ordination, fine motor skills, social and personal skills, perceptual (visual and auditory) skills, work skills, and play skills;
- (2) To counteract institutionalisation;
- (3) To counteract specific individual problems;
- (4) To promote resident contact with parents and sponsors, and to increase parental understanding;
- (5) To increase nursing staff understanding of techniques by which resident training is performed.

Community Involvement

School staff try for as much community involvement as possible, in the school. Invitations for the annual school Christmas party are sent to many sections of the community—parents and friends of residents, the local member of parliament, a representative from the media (newspapers, television) etc.

The school meets regularly with other schools for the intellectually handicapped for sports days and fun days. Some of the residents go to Pony Riding for the Disabled once a week, an invaluable community service. On all outings the residents are greatly encouraged to participate in community activities and to interact with people from outside Challinor Centre e.g. shopping, train rides, eating in cafes and restaurants, playing on the beach, and in parks, etc. Both the residents and the community members benefit by the interaction.

With the proposed training course for parents and friends of residents, it is hoped that community involvement with members of the school programme will be ever further enhanced.

All residents who attended the school have been taken on outings as frequently as possible.

Since the 22nd April, a number of the school children have been transferred to Basil Stafford Centre, and the others will follow shortly. This is in keeping with the ultimate plan of Challinor Centre's becoming an adult training centre. The school staff have been working on reports on the children and liaising with staff at Basil Stafford Training Centre.

The Social Work Section, from July to December, 1976, was staffed by one Social Worker and three Social Welfare Cadets, one of whom completed his training during this period. A fourth year Social Work student worked at the Centre for 17 weeks, as the final part of her training and a third year Social Work student completed his placement—2 days per week from July to October. Two Social Work positions remained unfilled.

Division of Duties: Two Cadets were assigned to undertake work as necessary in the Centre's units—each of these Cadets took responsibility for attending to welfare matters in one unit. Another Cadet helped with the School programme and provided information to parents about their respective children's performances in school. The Social Worker took overall responsibility for meeting the referrals and for continuing work, and assigned duties to Cadets and Students where possible.

Nature of Work

A. WITH AND FOR INDIVIDUALS

1. Casework with residents, families of residents, staff members and former residents. In this period, five members of Nursing Staff approached the Social Worker about personal problems and were referred to appropriate agencies where possible. This aspect of work seems to be increasing over time.

2. Administrative duties which included liaison with Central Assessment Clinic to arrange admissions and arranging for discharges of residents, day trips and leave for residents, and transfers to other Centres.

3. Follow up of former residents—two Cadets and the Social Worker took part in providing support of former residents who are living in rented houses in the community.

4. Arranging details where residents are ready for discharge—eg. accommodation.

5. Widening avenues for resocialization—eg. Cadets provided transport for residents going on leave and using public transport, and used these occasions to teach residents about the use of such transport.

6. Consultation with staff and liaison with agencies in relation to residents' employment (open and sheltered).

7. Consultation with Nursing, Paramedical and other staff in relation to training of residents and problems experienced by residents and their families.

8. Contact with families of people attending the Centre on a day basis.

B. WITH COMMUNITY AGENCIES

One Cadet acted as Convenor of the Challinor Centre Public Relations Committee. As a result of that outreach, many requests were received from community organizations for speakers to address various functions, and the Social Worker spoke to three groups of people in this time. Also, the Social Worker spoke to students of the Community Welfare course of the North Brisbane College of Advanced Education, and addressed volunteers of the Ipswich Citizens' Advice Bureau on aspects of mental retardation. Liaison continued with the Special Caring Services Division of the Methodist Church of Queensland, with the Claremont School of the Queensland Sub-Normal Children's Welfare Association in Ipswich, with the Chaplain of the Combined Churches, Wolston Park Hospital, and with members of the Church groups who visit the Centre on a regular basis. Aid Retarded Persons (Queensland) have begun an Activities Therapy Centre in Ipswich, and contact is maintained with that organization, and F.O.C.A.L. continues its work to help the Centre and the Social Worker has been involved in seeing that use is made of the resources provided by F.O.C.A.L. Contact with the Central Assessment Clinic has been constant. The Social Worker worked with a member of staff of the Family Planning Association, in a series of discussions about Human Relationships and to give sex education to a selected group of young adults. Also, with help from the Senior Occupational Therapist and the Speech Therapist, the Social worker arranged for five residents and one former resident to attend Remedial Reading Classes organized by Adult Education in Ipswich during the last term of the school year, and sat in on such classes as an aide in work with the residents.

Other Duties

1. Supervision of Social Work Students, which included liaison with the Social Work Department of the University of Queensland.

2. Supervision of Social Welfare Cadets, and this included attendance at meetings of Supervisors.

3. Cadets have escorted many visitors through the Centre.

4. The Social Worker interviewed members of the local community when complaints about residents were received.

5. As part of work with the Challinor Centre Public Relations Group, one Cadet arranged displays about the Centre's work.

6. Assistance with projects of Residential Care Workers (Training).

Summary

It has been very difficult, during this period, to try to keep pace with the requests made of this section, and in many cases, work has had to be allocated on a crisis basis, rather than seeking to be at a developmental level. Staff of this section continue to be used as "resource persons" by other members of staff. Shortage of staff has hindered what work could be done, and it was encouraging to have some enquiries from graduating Social Workers, during the latter part of the time under review, about prospects of work at the Centre.

Early in 1977, all three Social Work positions were filled. Two Social Welfare Cadets left the Centre at the end of January and the third, who had completed his training, applied to be reclassified as a Social Work Associate and was successful. A Social Work student is working 4 days a week for her first semester placement.

One Social Worker has taken responsibility for providing a Social Work service to residents of Arthur, Blair and Charles Pavilions, and to their families. She is also taking over responsibility for liaison with community agencies. A second is moving into work with Byron, Clair, Dagmar, Ellen and Frances Houses, and will undertake work with other activities within the Centre e.g. the Admissions and Assessment Committee for Threshold Industries. The third is the Social Worker for Grace House, and general oversight of all areas as well as working in the role of Principal Paramedical Officer. The Social Work Associate continues his work with the Challinor Centre Public Relations Group, is attending to administrative duties in relation to Byron House admissions, and works with all three Social Workers in attending to welfare matters of various cases.

The Principal Paramedical Officer works in the role of participating in discussions with all paramedical staff about work and any problems they may be experiencing, convening meetings of paramedical staff for communication purposes, inclusion in meetings about planning in relation to future policies and implementation of the new Residential Care system, and representing paramedical staff at meetings with nursing staff.

Summary: Again this has been a very busy time, and a difficult one for all concerned, especially for the new Social Workers taking over from a worker who has been associated with all residential areas for such a long time. There has had to be a very conscious effort on the part of that worker to withdraw from areas for which the new Social Workers are taking responsibility, while at the same time giving positive support and information to allow for as easy a transition as possible for the new workers. This added to the activities in the role of Principal Paramedical Officer, has again meant that some areas have not been attended as effectively as they might, but all workers are hopeful that the most difficult transition stage is now over.

Recreation Officers increased to six in number and their various activities are outlined hereunder.

The Personal Grooming Programme has now almost completed its eighth year. Few changes have been made re the physical environs as we have at our disposal a well equipped salon, which is fully utilized by all who attend this programme.

Over 70 women of all ages and levels of ability attend a half day session in P.G.D. weekly (averaging 8 per session) to learn pride of appearance. These aims are achieved through training in personal grooming, including hygiene, hair care, make up, dress, and manicuring. Apart from the obvious improved appearance, the work has many side issues such as the need to co-ordinate hand and eye when applying make up and nail polish.

A very important and successful part of the work is the frequent outings and home visits. These outings and home visits are enjoyed by all. This gives the public the opportunity to see mentally retarded people integrating in every day situations. The residents have formed an awareness of normal situations that are carried on outside the confines of Challinor. Frequent telephone calls are made to arrange times and dates for home visits. These are later referred for approval.

During the year, considerable activity in personal grooming has continued, averaging seventy female residents per week. Progress of the women varies according to the level of ability, but most important is the pleasure and self identification of the resident.

There is active involvement in a Senior Citizens Club for residents which is held each Thursday morning. Outings are organized with the Ladies Church Guild.

Monthly meetings are held with yet another Church group of ladies. All these visits are keenly attended by residents.

Areas such as Canework and Woodwork Sections continue to be run by Recreation Officers with particular interest in such fields, but have developed to the level of industrial therapy, with the accent on the training of residents to take their places in Activity Centres or Sheltered Workshops.

Three more recently appointed Recreation Officers are rostered over the working week to the Toy Library where their function is: to buy equipment suitable for Challinor Centre; to catalogue and control all equipment; to advise staff on choosing suitable equipment; to educate staff in the use of equipment; to research equipment; to collect literature on play methods, programming and toys; to maintain equipment in a satisfactory condition; lectures to new staff. When not attached to the Toy Library, each of the three have areas of responsibility within the Centre to provide such activities as sport, arts and crafts, cooking, table activities, music, planning and implementation of outings, camps and holidays, and concert parties.

Threshold Industries, originally declared a sheltered workshop with the object of being a "training and feeding" workshop to the community has now assumed the role of an Activities Centre, with equal accent being given to industrial, socialisation and recreational activities. Run by the After Caring Services of the Methodist Church, it has catered for a daily average of 30 residents throughout the year. The general

aim of Threshold Industries continues to be the development of basic work skills and behaviour patterns which will gain the acceptance of the residents by the general community.

The departure of Mr E. E. J. Pearce as Official Visitor to the Centre to undertake responsibilities in other areas was a sad moment after his years of association with Challinor Centre. The appointment of Mr R. S. Walker and Dr G. B. Roberts as Official Visitors is a pleasant one, since both are local professional people who know, and are known by, most of the staff.

At this time, recognition must be given to the members of Challinor Centre's Nursing Staff, for the roles they have played in the years of Centre's existence. They have taken part in the many changes that have occurred in that time, changes which have led to the introduction of the new caring profession. Theirs has not been an easy task, and probably the hardest task of all will be the decision they will have to make as to whether they want to remain as Nurses, and thus elect to transfer to one of the Psychiatric Hospitals, or to take part in the social education and training programme of the new caring profession. Both fields—those of mental illness and intellectual handicap—provide scope for dedication and innovation. Staff members who have worked in both areas will choose the field in which they think they can best use their skills. There will be sadness as friends choose to move away, and there will be the making of new friends, by staff and residents. Whatever the decision of staff members, it is hoped that they will find many satisfactions in their future work.

REGIONAL ASSESSEMENT CLINIC

The Toowoomba Regional Assessment Clinic commenced on 16th August, 1976, with the appointment of a social worker. Subsequently, premises were found at "Unara", 9 Tourist Road, Toowoomba, and the staffing establishment of social worker, psychologist, occupational therapist, physiotherapist and stenographer were filled.

The primary role of the Clinic team is the multi-disciplinary assessment of intellectually handicapped infants, children and adults. On the basis of these assessment, appropriate management programs are designed. The current referral rate is averaging sixteen new referrals monthly, with the following age distribution:—

Infants (5 years and younger)	..	..	44%
Children (6-15 years)	..	..	16%
Young Adults (16-25 years)	..	..	22%
Adults (25 years and over)	..	..	18%

Infant referrals are generally found to be for stimulation programs, in which parents are taught appropriate skills within their homes. This constitutes the major workload of the physiotherapist and occupational therapist. It is recognised that there is a strong need for a speech pathologist to complete this therapy team. From time to time, speech pathology is available through the Central Assessment Clinic, and through liaison with other service agencies. The proposed provision of therapy space within the Clinic is likely to reduce the number of home visits necessary by the therapists, with a subsequent increase in efficiency.

Referral of older children and adults is more frequently related to admission to residential facilities. The Clinic is responsible for admission to the Disabled Children's Ward, Maryborough Hospital and to Tredgold and Lewis Houses within Baillie Henderson Hospital, Toowoomba. Waiting lists are being compiled for recently constructed Villas in Toowoomba and Maryborough.

The Clinic maintains close liaison with community groups within the Toowoomba area. The Clinic's provision of professional consultation and guidance to the Toowoomba Child Care and Community Centre Association is of particular significance. This is reflected in involvement with this Association's Handicapped Children's Playgroup which operates on two mornings each week, and with the proposed establishment of a school to cater for the needs of children with a multiplicity of handicaps which preclude their attendance at

other Centres. It is anticipated that such a facility will offer educational stimulation to some children to be admitted to the Villa for the Intellectually Handicapped in Toowoomba. The Toowoomba Child Care and Community Centre Association has made available also a short-stay flat, for use by parents from the country who are visiting Toowoomba for assessment.

Similarly there is close co-ordination with the special teacher and research officer at the South Preschool, operated by the Department of Education. Assessments of preschoolers with intellectual handicaps are made available to the special teacher, and Clinic members participate in the structuring of appropriate activities for these children within the preschool. South Preschool when necessary makes space available for use by Clinic for assessment purposes.

It is anticipated that the Clinic will further develop its resource role in relation to other agencies and to families since it is essential to maintain a focal point for all information relevant to intellectually handicap and associated services.

Within the short time of the Clinic's functioning, it is noteworthy that close rapport has been established with the Child Welfare and Guidance Clinic, the Department of Children's Services, Guidance and Special Education Branch, Queensland Spastic Welfare League, and the Queensland Subnormal Children's Welfare Association.

A major priority of the Clinic is the provision of adequate services to clients geographically isolated from existing services. The Clinic area extends from Bundaberg in the north, and west to the border. Each professional staff member visits Maryborough and Bundaberg for approximately three days monthly, and major population centres on the Darling Downs are visited on a regular basis. An index of the extent of this itinerant service is the distance travelled by the Clinic vehicle—in excess of 5 000 km monthly. Although the extent of the travelling places physical and social stress on Clinic staff, they consider that this is justified in terms of quality of service offered.

The establishment of a new service has had its frustrations and delays, but, within these constraints, the Clinic has been able to provide comprehensive professional services, and become closely involved with the development of community resources for the intellectually handicapped within the area covered.

BASIL STAFFORD TRAINING CENTRE, WACOL

Through the past year, Basil Stafford Centre has continued to emphasize the involvement of children and staff in a range of community activities. This has been reflected for example in the attendance of some residents at special schools, including Claremont Sub-Normal School, Multicap Meadows, the Spastic Centre, Deaf School, Narbethong School for the Blind, and at Mach I Activity Centre and Parkhaven Sheltered Workshop. This experience has contributed to the graduation of some residents to hostel and family-group home living situations in the community.

The children have gained enjoyment and have benefited in their social development from participation in holiday camps at the House of Happiness at Bribie and the Spastic Welfare League accommodation at Rainbow Bay. Sincere appreciation is due to both staff and members of the Aveyron Parents and Friends Association, who volunteered their time and effort. The children similarly participated in the annual Handicapped Sports Day.

The marked improvement in the children's level of independence and in their social skills, apparent when they were able to interact in small groups in more normal living environments, augured well for the anticipated move into the newly-constructed Villa houses at the Centre. A highlight of the past year has been the completion of this accommodation for 96 residents in 16 houses to accommodate family-sized groups of 6. The Villa Complex was officially opened by the Honourable the Minister for Health on 20-5-77 and the opening of this new phase in the Department's Services was attended by a wide representation from other government departments and voluntary organizations.

The Villa houses have been designated by the names of native Australian plants, to correspond with the bushland setting and to stress the individuality of each house.

The movement of children into their new homes was commenced in June of this year, with the co-operation of all concerned staff and the welcome assistance of the Aveyron Parents and Friends Association. It is anticipated that 8 houses will be occupied by mid-July, with the remaining houses to be occupied in the latter part of the year. As they were occupied, the Villa houses came under the administration of the Residential Care Training Unit, established to implement the new caring model and staffed by Residential Care Workers and Residential Care Assistants. This Unit, comprising the initial unit of "Melaleuca" and "Banksia" and the Villa houses, will be incorporated into the new structure of Basil Stafford Centre as from 5-9-77, and the new model of care will be extended throughout the centre.

Essential elements of this development will be the establishment of an Activities Block of the former Special School Building, which has in recent years been used as residential accommodation. The Activities Block will now accommodate the Special Teachers, Speech Pathologist, Occupational Therapist and Physiotherapist. The creation of the new positions of occupational therapist and physiotherapist at the centre is welcomed.

Involved in the overall development of the Centre, also, is the anticipated transfer of children from Dagmar House, Challinor Centre, Ipswich to Basil Stafford Training Centre.

Other physical improvements to the Centre area have included road works to improve access, and the completion of an additional area to accommodate professional and administrative staff.

The past year has thus involved some frustration and anxiety, as well as challenge, for staff in the implementation of some changes and the anticipation of more comprehensive changes to come. However, the changes will also present the opportunity to co-operate with other sections of Intellectual Handicap Services in the overall planning and development of a new service.

It is always stimulating, as in the past year, to have contact with students from Queensland University and Colleges of Advanced Education. Students have visited the centre and some have engaged in individual research projects, with staff assistance. It is hoped that this student contact will expand in the future.

ALCOHOL AND DRUG DEPENDENCE SERVICE

GENERAL

The design and implementation of a comprehensive service in this field has encountered a number of problems. Particularly has this been so in a year of financial restraint and related difficulties in the recruitment of staff. Despite these problems, much has been achieved and the positions of Nurse Therapists and Counsellors have been created and advertised.

This work has been accomplished by a small group of officers seconded from other posts but working together to provide sound plans for the opening of the new premises at Roma Street, as well as the implementation of both a service and training programme for staff members.

Significant changes have taken place in the treatment services for narcotic dependent persons. The methadone programme has been totally reviewed and is now on a firm basis

providing effective supervision of dependent persons whilst they are undergoing psychotherapeutic and rehabilitative measures.

A significant development has been the co-operation with voluntary agencies and good relationships have been developed between officers of the State services and workers in voluntary agencies.

A programme designed to limit the effects of alcoholism in industry has been set up by a voluntary organisation with the full co-operation of State officers. Of necessity this programme must develop slowly but will be part of the comprehensive programme aimed at the provision of effective services not only in the metropolitan area but in other centres throughout the State.

HERSCHEL STREET CLINIC

Senior Psychiatrist-in-Charge: J. T. QUINN, M.D., B.Sc., D.P.M., M.R.C.Psych., A.B.P.S., until April, 1977.

Senior Psychiatrist-in-Charge: A. FREED, M.B., B.Ch., M.R.C.P., M.R.C.Psych., D.P.M., from May, 1977.

In this year the Alcohol and Drug Dependence Service has undergone considerable change and expansion. The temporary premises at P.F.C. House, Herschel Street (previously Millaquin House), have been the focus of several developments. The major developments with respect to service have been initiated and these will expand when the service transfers to the new building in Roma Street which is expected to be commissioned early in the new financial year.

These developments include a crisis intervention service for people with alcohol problems, an outpatient service for patients discharged from Wacol Rehabilitation Clinic, a dual level drug dependence programme and a counselling service for people concerned with alcohol or drug dependency.

This crisis intervention programme is one in which a social worker, doctor, nurse or social work associate responds to a call from the community, to arrange appropriate further help.

The Wacol Rehabilitation Outpatient Programme has been a joint effort by the staff of that clinic and of the Herschel Street Clinic. Its structure has been governed by the structure of the Wacol Rehabilitation Clinic treatment programmes.

This new outpatient programme was initiated in late March, 1977. Patients are followed-up by a member of their own treatment team.

The Drug Dependence Service transferred in early April from Mary Street to P.F.C. House. It is largely attended by abusers of the narcotic class of drugs but is open to and serves other drug dependent persons.

The service allows illegal drug users an opportunity of leaving the illegal drug subculture and initiating both medical treatment and a new life style. Group therapy on an outpatient basis is available to foster motivation and to give support during the difficult period of rehabilitation. The drug clinic also provides a seven day a week service to the intravenous drug-using population. A State wide record system of known drug addicts has been implemented.

The counselling information service has operated at a low key level but will expand considerably in the future.

The service has been highly active and has gained further impetus in the last few months, in preliminary planning of the staffing structure and functioning in the Roma Street Clinic. This includes the mode of integration with other alcoholism units with rural areas, State wide, and with the considerable expertise of voluntary organisations. Staff training programmes have been defined and the groundwork for future training of members of other organisations, e.g. Community Health, Aboriginal Health, has been laid.

WACOL REHABILITATION CLINIC

Acting Clinic Supervisor: R. J. CARVOLTH, B.A.(Hons.), M.A.Ps.S.

Currently, the Clinic provides a range of some six programme strands within its 120 beds and operates three out-patient programmes.

Admission assessment procedures have been restructured with the development of a problem and goal-oriented format which aims at identifying the person's needs across all areas of functioning, and arriving with the client at acceptable and practical goal setting. This then provides directives for the treatment plan which can be continued during outpatient work and any future hospitalisations.

Monitoring of physical indices of recovery has received the attention of medical and nursing staff and we have been able to further develop this aspect of physical care. The commencement of physiotherapy sessions has been most welcome.

The group therapy staff (including those developing the 19 bed therapeutic community) have benefited considerably through two weekly professional development procedures: the sensitivity group and the peer supervision session. Both have contributed greatly to increased staff morale and teamwork and have enabled a much more profound understanding of ourselves and our clients to grow. The sensitivity group has facilitated continuing growth of staff at personal, interpersonal, and professional levels. It has also served the function of assisting in the integration of the staff team in Herschel Street (City) with that at the Wacol Rehabilitation Clinic, since there has been regular involvement of city staff in the group. The supervision session adds to the traditional group and case presentation the important dimension of examining the attitudes and behaviour of the treatment staff members, a whole universe that can too frequently be ignored or denied.

The bed capacity was increased in 1976 to 120 and significant expansion of treatment programmes has been achieved. The degree of staff development during this period is partly reflected in the fact that at the same time the average duration of stay has been decreased, the average daily patient number has been increased by 4 per cent to 94 and total admissions for the year have been increased by 9 per cent to 904.

Both therapy programmes have significantly intensified their schedules and are complementing group sessions and psychodrama with video-confrontation, implosion therapy for phobic areas, relaxation training and marital therapy. A number of "graduates" of these problems have maintained outpatient contact, and residents have been privileged to have the benefit of their returning to address community meetings and participate in group sessions.

The occupational rehabilitation programme, operating on long-term stays, has discharged a number of residents to supportive after-care and has successfully completed construction of a sealed and fenced tennis court. This is a most attractive and functional addition to clinic facilities. A vegetable gardening area has also been developed.

The 48 bed unit catering for short-term recovery now has a motivational programme for non-voluntary residents, in addition to physical care and work therapy.

Our weekly outpatient programme at Pavilion 4 has been augmented by the allocation of staff to assist in the commencement of a service at the Herschel Street Clinic. Afternoon outpatient sessions have also been established at the Clinic. A spontaneous development from the resident group and alumni has resulted in a monthly barbecue and social gathering to which outpatients return with friends and family. The active evening socialisation programmes are continuing to help maintain community links for existing residents.

Participation in the after-care residence system has continued and the newer homes have stabilised considerably in the last 12 months. Particular credit must go to the local committees in the St. Vincent de Paul group homes for their success. But as in the independent residences, the prime commendations should be given to the attitudes and mature functioning of the men and women who have joined these homes. Active liaison is being extended to residences maintained at Southport and Toowoomba by Karakan, an independent after-care service.

Psychology and nursing staff are actively engaged in research projects. Three outcome evaluation studies are currently in progress. One of these is continuing to work with the data collected on 92 patients' parameters over the last two years. A study of self-concept of alcoholic persons has also begun. A major review of literature on drinking, drugs and driving has been made and innovation encompassing health, legal, education, liquor manufacture and marketing is being planned.

The Clinic continues to be the major training unit for Psychiatric Services in group therapy and inpatient management of the alcoholic person. This year a full range of undergraduate and postgraduate sessions and placements has been followed with students from the Nursing School at Wolston Park Hospital and courses in Community and Social Welfare, clinical and counselling psychology and social and preventive medicine. This training role will be considerably underlined with the service receiving the team of nurse therapists and counsellors presently being recruited.

It is intended that Wacol Rehabilitation Clinic will continue to expand and innovate and retain its many faceted delivery of client service in the developing Branch.

ALCOHOLISM CLINIC, PAVILION 4

Medical Officer-in-Charge: R. Y. SMOUT, M.B., B.S.(Qld.) until 8-10-76.

Acting Medical Officer-in-Charge: A. FREED, M.B., B.Ch., M.R.C.P., M.R.C.Psych., D.P.M., from November, 1976.

Staff Changes

During the last financial year this Clinic has seen quite a few people coming and going. Each one left his/her mark in the way in which they contributed and we appreciate the dedication shown, their willingness in participating in the therapeutic programme, their initiatives and suggestions for further improvement in treatment delivery.

Firstly must be mentioned Dr Ruth Smout who for four years as part-time/full-time Medical Officer-in-Charge, gave more than her duty required of her. Under her direction the Clinic kept expanding in numbers and purpose and her consistency and stability contributed greatly to the patients' and staff's feeling of belonging and caring. Although it is already eight months since her resignation, people connected with the Clinic still talk of her with warmth and appreciation.

In November the Clinic was glad to welcome Dr A. Freed, with whom the patients and staff of Pavilion 4 continued to work, employing and improving the treatment modalities developed at the Clinic. Due to his overall commitments as Senior Psychiatrist, his time at Pavilion 4 has been limited to date. To carry on the day-to-day medical/psychiatric needs, we had Dr Tucker and Dr Piaggio from October to June. They attended the Clinic on a part-time basis, and their contribution was valuable as they involved themselves by participating in taking group sessions, apart from carrying out their normal medical duties.

Mrs Wernigk, Liaison Officer, resigned in December, 1976, after nearly seven years of service at the Clinic. In her own versatile way she succeeded in performing her duties of keeping in touch with other agencies in a more than satisfactory way, together with fulfilling the active roles of group therapist and social worker in accordance with her usual high standards.

Miss Jenkins was employed as Liaison Officer in January, 1977, and in her short time has proved to be an asset to the Clinic. Miss Jenkins is a qualified Occupational Therapist with several years experience. She has shown competence in the way she has been developing an occupational therapy programme which is therapeutically valuable.

We have also seen several changes with the nursing aides. Most of the changes were due to hospital movement of nurses. Special mention should be made of Assistant Nurse Stegeman who retired after 10 years of service at Pavilion 4. Her sense of responsibility and empathy towards the patients will be hard to match and were well beyond the call of duty.

Training

Staff at Pavilion 4 played an increasing role in the past year, in the training of multi-disciplinary students. Mr Farrugia (Psychologist) Mrs Kevi (Social Worker) and Mrs

Livingstone (Social Worker), were the supervisors for psychology students (University of Queensland), social work students (University of Queensland), welfare officer cadets (North Brisbane College of Advanced Education), and Alcoholism Services cadets (Herschel Street Clinic). These placements centre around information, observation of groups and individual therapy, together with the actual practical experience of leading film and group sessions. All the other staff members cooperate in making each placement meaningful to the students.

Statistics

The number of new patients referred by all agencies has dropped by 4 per cent while the number of patients continuing treatment has increased by 5 per cent. It is interesting to note that female patients returning for further treatment increased dramatically by 39 per cent. To the staff this is encouraging as patients are being more realistic in their life-system re-organisations. It seems that they are realising that one needs an ongoing programme rather than the "15 day miracle cure".

Actual total admissions of inpatients rose by 4 per cent while the bed totals rose by 8 per cent. This seems to indicate that inpatients tended to stay for the whole two week programme, more so than in the previous year.

The seemingly drastic drop of patients and relatives attending group meetings is partly accounted for by a change in method of counting daily numbers. Up to this year some patients were counted for each group they attended in the same day.

Tuesday evening follow-up group attendance is down by 20 per cent. (There are no statistics regarding status of attending patients.) Possible reasons for lower attendance can be attributed to attending patients being younger and single. Also important is the resignation of Dr R. Smout. During her four years at the Clinic, patients had been accustomed to come up to "see the Doctor".

In conclusion, the last year was another progressive one for Pavilion 4. New treatment modalities were tried and others improved. A more active participation in the multi-disciplinary training programme was also pursued. With the creation of the Alcoholism and Drug Dependence Service, there has been increasing contact and exchange both with the Herschel Street Clinic and Wacol Rehabilitation Clinic staff. The result of all this has been an increase in interest in the alcohol dependence field whether it is treatment, education or prevention.

TABLE LIV
 NUMBERS OF INDIVIDUAL PATIENTS TREATED BY
 OUT-PATIENT FACILITIES DURING THE YEAR
 ENDING 30TH JUNE, 1977
 GROUPED BY DIAGNOSIS

	Psychiatry Clinic, 30 Mary Street	Psychiatric Clinic, Stones Corner
1. Senile, Presenile Dementia	2	6
2. Alcoholic Psychoses	11	3
3. Other Organic Psychoses	36	6
4. Schizophrenia and Paranoid States	718	167
5. Depressive Psychoses	67	68
6. Other Functional Psychoses	46	26
7. Depressive Neuroses	373	235
8. Other Neuroses and Psychosomatic Disorders	318	173
9. Alcoholism	79	18
10. Personality Disorders	296	149
11. Sexual Deviations	32	5
12. Drug Dependence	176	17
13. Transient Situational Disturbances	82	159
14. Behaviour Disorders of Childhood	7	12
15. Non-Psychotic Mental Disorders associated with physical conditions	31	7
16. Special Symptoms not elsewhere classified	9	1
17-22. Mental Retardation	67	12
23. Social Reasons	5	4
24. No Psychiatric Diagnosis	79	66
TOTAL	2 434	1 134

TABLE LV
 NUMBER OF INDIVIDUAL PATIENTS TREATED BY OUT-PATIENT FACILITIES DURING THE
 YEAR ENDING 30TH JUNE, 1977
 GROUPED BY AGE AND SEX

	Psychiatry Clinic, 30 Mary Street			Psychiatric Clinic, Stones Corner		
	Males	Females	Total	Males	Females	Total
< 5	..	..	..	..	..	..
5 < 10	..	..	..	..	..	..
10 < 15	..	1	1	9	6	15
15 < 20	115	69	184	31	61	92
20 < 25	222	151	373	81	97	178
25 < 30	208	103	311	62	103	165
30 < 35	144	86	230	51	89	140
35 < 40	108	87	195	43	77	120
40 < 45	114	100	214	33	64	97
45 < 50	117	146	263	29	53	82
50 < 55	96	133	229	31	55	86
55 < 60	64	118	182	14	43	57
60 < 65	53	76	129	13	37	50
65 < 70	28	42	70	4	24	28
70+	17	36	53	8	16	24
TOTAL ..	1 286	1 148	2 434	409	725	1 134

TABLE LVI
PSYCHIATRIC HOSPITALS
SHOWING ADMISSIONS AND DISCHARGES DURING THE YEAR ENDED 30TH JUNE, 1977

	Wolston Park Hospital			Baillie Henderson Hospital			Mosman Hall			Grand Total		
	Male	Female	Total	Male	Female	Total	Male	Female	Total	Male	Female	Total
ON THE BOOKS as at 1st July, 1976	874	386	1 260	439	328	767	229	0	229	1 542	714	2 256
Total Admissions during year	746	445	1 191	207	133	340	103	0	103	1 056	578	1 634
Total Under Care during year	1 620	831	2 451	646	461	1 107	332	0	332	2 598	1 292	3 890
Total Discharges during year	778	443	1 221	240	177	417	103	0	103	1 121	620	1 741
Resident as at 30th June, 1977	760	346	1 106	391	268	659	214	0	214	1 365	614	1 979
On Leave as at 30th June, 1977*	82	42	124	15	16	31	15	0	15	112	58	170
Total on Hand as at 30th June, 1977	842	388	1 230	406	284	690	229	0	229	1 477	672	2 149
Average Number Daily Resident	757	323	1 080	392	296	688	217	0	217	..	..	..
Proportion of number of patients remaining on Books to each 1 000 population as at 30th June, 1977										1.39	0.64	1.08
Proportion of Admissions per 10 000 population for year ending 30th June, 1977										9.93	5.51	7.73

* This figure does not include patients on leave for special care, who are included with patients resident for this Table and Table LXIII.

TABLE LVII
ADMISSIONS TO PSYCHIATRIC HOSPITALS FOR THE YEAR ENDING 30TH JUNE, 1977
GROUPED BY DIAGNOSIS

	Wolston Park Hospital	Baillie Henderson Hospital	Mosman Hall	Grand Total
	1976-77	1976-77	1976-77	1976-77
1. Senile, Presenile Dementia	72	14	6	92
2. Alcoholic Psychoses	91	23	19	133
3. Other Organic Psychoses	61	17	9	87
4. Schizophrenia and Paranoid States	345	74	7	426
5. Depressive Psychoses	40	16	1	57
6. Other Functional Psychoses	76	26	0	102
7. Depressive Neuroses	58	21	1	80
8. Other Neuroses and Psychosomatic Disorders	18	12	1	31
9. Alcoholism	132	87	39	258
10. Personality Disorders	67	19	9	95
11. Sexual Deviation	1	0	0	1
12. Drug Dependence	29	4	0	33
13. Transient Situational Disturbances	8	1	0	9
14. Behaviour Disorders of Childhood	11	4	0	15
15. Non-Psychotic Mental Disorders associated with physical conditions	37	2	6	45
16. Special symptoms not elsewhere classified	12	0	0	12
17-22. Mental Retardation	116	18	2	136
23. Social Reasons	4	2	0	6
24. No Psychiatric Diagnosis	13	0	3	16
TOTAL	1 191	340	103	1 634

TABLE LVIII
ADMISSIONS TO PSYCHIATRIC HOSPITALS FOR THE
YEAR ENDING 30TH JUNE, 1976
GROUPED BY CLASSIFICATION

	1976-77
Wolston Park Hospital—	
Voluntary	737
Regulated	440
Forensic	14
Baillie Henderson Hospital—	
Voluntary	208
Regulated	132
Forensic	0
Mosman Hall—	
Voluntary	45
Regulated	57
Forensic	1

TABLE LIX
ADMISSIONS TO PSYCHIATRIC HOSPITALS FOR YEAR ENDING 30TH JUNE, 1977
GROUPED BY AGE—(MALE AND FEMALE)

				Wolston Park Hospital		Baillie Henderson Hospital		Mosman Hall		Grand Total	
				Male	Female	Male	Female	Male	Female	Male	Female
< 5	..	..	..	0	0	1	1	0	0	1	1
5 < 10	..	..	..	0	1	0	0	0	0	0	1
10 < 15	..	..	..	15	9	0	1	0	0	15	10
15 < 20	..	..	..	42	26	2	8	1	0	45	34
20 < 25	..	..	..	57	45	15	19	3	0	75	64
25 < 30	..	..	..	65	33	18	13	4	0	87	46
30 < 35	..	..	..	82	23	18	23	4	0	104	46
35 < 40	..	..	..	56	33	20	9	7	0	83	42
40 < 45	..	..	..	59	31	29	4	13	0	101	35
45 < 50	..	..	..	69	38	20	6	15	0	104	44
50 < 55	..	..	..	78	43	25	12	7	0	110	55
55 < 60	..	..	..	82	42	18	10	13	0	113	52
60 < 65	..	..	..	49	24	20	6	10	0	79	30
65 < 70	..	..	..	38	30	9	6	11	0	58	36
70 +	..	..	..	54	67	12	15	15	0	81	82
TOTAL				746	445	207	133	103	0	1 056	578

TABLE LX
PSYCHIATRIC HOSPITALS—PATIENTS IN RESIDENCE AT 30TH JUNE, 1977
GROUPED BY DIAGNOSIS

				Wolston Park Hospital	Baillie Henderson Hospital	Mosman Hall	Grand Total
				1976-77	1976-77	1976-77	1976-77
1. Senile, Presenile Dementia	..	..	..	55	15	10	80
2. Alcoholic Psychoses	..	..	..	157	51	54	262
3. Other Organic Psychoses	..	..	..	93	31	14	138
4. Schizophrenia and Paranoid States	..	..	..	305	186	61	552
5. Depressive Psychoses	..	..	..	17	5	10	22
6. Other Functional Psychoses	..	..	..	45	22	3	70
7. Depressive Neuroses	..	..	..	23	6	0	29
8. Other Neuroses and Psychosomatic Disorders	..	..	..	7	5	1	13
9. Alcoholism	..	..	..	95	29	23	147
10. Personality Disorders	..	..	..	25	11	4	40
11. Sexual Deviation	..	..	..	2	0	1	3
12. Drug Dependence	..	..	..	4	0	0	4
13. Transient Situational Disturbances	..	..	..	3	0	0	3
14. Behaviour Disorders of Childhood	..	..	..	12	4	0	16
15. Non-Psychotic Mental Disorders associated with physical conditions	..	..	..	47	55	7	109
16. Special symptoms not elsewhere classified	..	..	..	5	1	0	6
17-22. Mental Retardation	..	..	..	188	231	33	452
23. Special Reasons	..	..	..	2	2	0	4
24. No Psychiatric Diagnosis	..	..	..	11	1	2	14
TOTAL				1 096	655	213	1 964

TABLE LXI
PSYCHIATRIC HOSPITALS
PATIENTS IN RESIDENCE AT 30-6-1977
GROUPED BY CLASSIFICATION

				1976-77
Wolston Park Hospital—				
Voluntary	..	..	..	691
Regulated	..	..	..	388
Forensic	..	..	..	17
Baillie Henderson Hospital—				
Voluntary	..	..	..	542
Regulated	..	..	..	111
Forensic	..	..	..	2
Mosman Hall—				
Voluntary	..	..	..	129
Regulated	..	..	..	80
Forensic	..	..	..	4

TABLE LXII
PSYCHIATRIC HOSPITALS
PATIENTS IN RESIDENCE AT 30TH JUNE, 1977
GROUPED BY SEX AND AGE

—	Wolston Park Hospital		Baillie Henderson Hospital		Mosman Hall		Grand Total	
	1976-77		1976-77		1976-77		1976-75	
	Male	Female	Male	Female	Male	Female	Male	Female
< 5	0	0	0	0	0	0	0	0
5<10	0	0	1	1	0	0	1	1
10<15	0	1	4	6	0	0	4	7
15<20	18	12	12	8	0	0	30	20
20<25	55	12	6	21	7	0	68	33
25<30	50	17	25	33	5	0	80	50
30<35	42	24	28	26	7	0	77	50
35<40	55	18	35	21	15	0	105	39
40<45	37	17	35	26	16	0	88	43
45<50	69	34	38	32	26	0	133	66
50<55	106	37	52	28	32	0	190	65
55<60	119	51	44	27	39	0	202	78
60<65	99	29	53	10	18	0	170	39
65<70	48	28	31	5	25	0	104	33
70+	56	62	26	21	23	0	105	83
TOTAL ..	754	342	390	265	213	0	1 357	607

TABLE LXIII

CENTRES FOR THE TRAINING OF THE INTELLECTUALLY HANDICAPPED SHOWING ADMISSIONS AND DISCHARGES DURING THE YEAR ENDED 30TH JUNE, 1977

—	Basil Stafford Training Centre			Challinor Centre			Grand Totals		
	Males	Females	Totals	Males	Females	Totals	Males	Females	Totals
On the books as at 1st July, 1976	84	51	135	278	246	524	362	297	659
Total Admissions during year	86	70	156	46	39	85	132	109	241
Total Under Care during year	170	121	291	324	285	609	494	406	900
Total Discharges during year	62	47	109	57	54	111	119	101	220
Resident as at 30th June, 1977	105	71	176	258	229	487	363	300	663
On Leave as at 30th June, 1977*	3	3	6	9	2	11	12	5	17
Total on Hand as at 30th June, 1977	108	74	182	267	231	498	375	305	680
Average Number Daily Resident	82	59	141	259	232	491	..	..	..
Proportion of number of patients remaining on Books to each 1 000 population as at 30th June, 1977 ..							0.35	0.29	0.32
Proportion of Admissions per 10 000 of population for year ending 30th June, 1977							1.24	1.04	1.14

* This figure does not include patients on leave for special care, who are included with patients resident for this Table and Table LVI

TABLE LXIV

TRAINING CENTRES
PATIENTS IN RESIDENCE AT 30TH JUNE, 1977
GROUPED BY PRINCIPAL DIAGNOSIS

—	Challinor Centre	Basil Stafford	Grand Total
17. Borderline M.R.	3	0	3
18. Mild M.R.	55	1	56
19. Moderate M.R.	139	44	183
20. Severe M.R.	202	63	265
21. Profound M.R.	58	14	72
22. Unspecified M.R.	2	41	43
17-22. Total M.R.	459	163	622
Other (Principal Diagnosis not M.R.)	26	13	39
TOTAL	485	176	661

ADMISSIONS TO TRAINING CENTRES FOR THE INTELLECTUALLY HANDICAPPED DURING THE YEAR ENDING 30TH JUNE, 1977
GROUPED BY PRINCIPAL DIAGNOSIS

—	Challinor Centre	Basil Stafford	Grand Total
17. Borderline M.R.	0	2	2
18. Mild M.R.	13	1	14
19. Moderate M.R.	35	31	66
20. Severe M.R.	32	55	87
21. Profound M.R.	0	12	12
22. Unspecified M.R.	3	42	45
17-22. Total M.R.	83	143	226
Other (Principal Diagnosis not M.R.)	2	13	15
TOTAL	85	156	241

TABLE LXV
ADMISSIONS TO TRAINING CENTRES FOR THE INTELLECTUALLY HANDICAPPED FOR YEAR
ENDING 30TH JUNE, 1977
GROUPED BY AGE

				Challinor Centre			Basil Stafford Training Centre			Grand Total		
				Male	Female	Total	Male	Female	Total	Male	Female	Total
< 5	..	..	..	0	0	0	0	0	0	0	0	0
5 < 10	..	..	..	0	0	0	23	3	26	23	3	26
10 < 15	..	..	..	0	0	0	29	27	56	29	27	56
15 < 20	..	..	..	13	8	21	24	17	41	37	25	62
20 < 25	..	..	..	15	9	24	6	9	15	21	18	39
25 < 30	..	..	..	6	8	14	3	7	10	9	15	24
30 < 35	..	..	..	5	2	7	0	4	4	5	6	11
35 < 40	..	..	..	1	6	7	0	1	1	1	7	8
40 < 45	..	..	..	0	0	0	0	0	0	0	0	0
45 < 50	..	..	..	3	1	4	1	1	2	4	2	6
50 < 55	..	..	..	0	1	1	0	0	0	0	1	1
55 < 60	..	..	..	1	4	5	0	1	1	1	5	6
60 < 65	..	..	..	2	0	2	0	0	0	2	0	2
65 < 70	..	..	..	0	0	0	0	0	0	0	0	0
70+	..	..	..	0	0	0	0	0	0	0	0	0
TOTAL	..	..	..	46	39	85	86	70	156	132	109	241

TABLE LXVI
TRAINING CENTRES
PATIENTS IN RESIDENCE AT 30TH JUNE, 1977
GROUPED BY AGE AND SEX

				Challinor Centre			Basil Stafford Training Centre			Grand Total		
				1976-77			1976-77			1976-77		
				Male	Female	Total	Male	Female	Total	Male	Female	Total
< 5	..	..	..	0	0	0	0	0	0	0	0	0
5 < 10	..	..	..	0	2	2	13	6	19	13	8	21
10 < 15	..	..	..	22	25	47	46	21	67	68	46	114
15 < 20	..	..	..	41	46	87	37	25	62	78	71	149
20 < 25	..	..	..	46	49	95	6	8	14	52	57	109
25 < 30	..	..	..	27	20	47	2	5	7	29	25	54
30 < 35	..	..	..	31	10	41	0	4	4	31	14	45
35 < 40	..	..	..	21	12	33	0	1	1	21	13	34
40 < 45	..	..	..	9	8	17	0	0	0	9	8	17
45 < 50	..	..	..	18	11	29	1	1	2	19	12	31
50 < 55	..	..	..	19	16	35	0	0	0	19	16	35
55 < 60	..	..	..	13	13	26	0	0	0	13	13	26
60 < 65	..	..	..	2	13	15	0	0	0	2	13	15
65 < 70	..	..	..	4	2	6	0	0	0	4	2	6
70+	..	..	..	3	2	5	0	0	0	3	2	5
TOTAL	..	..	..	256	229	485	105	71	176	361	300	661

TABLE LXVII
WACOL REHABILITATION CLINIC
ADMISSIONS FOR YEAR ENDING 30TH JUNE, 1977
GROUPED BY AGE AND SEX

TABLE LXVIII
WACOL REHABILITATION CLINIC
PATIENTS IN RESIDENCE AT 30TH JUNE, 1977
GROUPED BY AGE AND SEX

				1976-77		
				Males	Females	Totals
< 5	..	..	..	0	0	0
5 < 10	..	..	..	0	0	0
10 < 15	..	..	..	0	0	0
15 < 20	..	..	..	6	1	7
20 < 25	..	..	..	25	2	27
25 < 30	..	..	..	45	4	49
30 < 35	..	..	..	91	5	96
35 < 40	..	..	..	128	17	145
40 < 45	..	..	..	150	10	160
45 < 50	..	..	..	166	14	180
50 < 55	..	..	..	115	3	118
55 < 60	..	..	..	70	5	75
60 < 65	..	..	..	30	4	34
65 < 70	..	..	..	14	0	14
70+	..	..	..	2	0	2
TOTAL	..	..	..	842	65	907

				1976-77		
				Males	Females	Totals
< 5	..	..	..	0	0	0
5 < 10	..	..	..	0	0	0
10 < 15	..	..	..	0	0	0
15 < 20	..	..	..	1	0	1
20 < 25	..	..	..	5	0	5
25 < 30	..	..	..	4	2	6
30 < 35	..	..	..	7	0	7
35 < 40	..	..	..	19	1	20
40 < 45	..	..	..	10	1	11
45 < 50	..	..	..	21	1	22
50 < 55	..	..	..	18	1	19
55 < 60	..	..	..	8	2	10
60 < 65	..	..	..	2	0	2
65 < 70	..	..	..	1	0	1
70+	..	..	..	0	0	0
TOTAL	..	..	..	96	8	104

TABLE LXIX

—	1975-76	1976-77	Per cent Change
New Patients	635	607	4%
Patients continuing treatment ..	622	653	5%+
TOTAL PATIENTS	1 257	1 260	..
New Relatives	326	265	19%—
Relatives continuing treatment ..	93	103	10%+
TOTAL RELATIVES	419	368	12%—
TOTAL PATIENTS AND RELATIVES	1 676	1 628	3%—
GROUP MEETING ATTENDANCES ..	16 188	10 526	35%—
Visits to Clinic by Patients ..	8 818	7 296	11%—
Visits to Clinic by Relatives ..	1 636	1 359	17%—
TOTAL VISITS MADE	10 454	8 655	17%—
TUESDAY EVENING GROUPS ..	3 905	3 107	20%—

TABLE LXX

MENTAL HEALTH REVIEW TRIBUNAL—1976-77

Applications adjourned from 1975-76	7	
Applications awaiting hearing as at 30th June, 1976	2	
	—	9
Applications received by the Tribunal during 1976-77—		
From patients	24	
From nearest relatives of patients .. ..	..
From others	2	
	—	26
		35
Applications heard by the Tribunal during 1976-77—		
Refused	14	
Refused but recommended for leave, &c. ..	..
Recommended for release on parole ..	1	
Recommended for discharge	1	
Adjourned <i>sine die</i> .. .. .	..
Otherwise adjourned as at 30th June, 1977	6	
Applications lapsed .. .. .	..
	—	22
Applicants who failed to appear before Tribunal—		
(Withdrawal of Application)	8	
(Declared informal patient)	1	
	—	9
Applications awaiting hearing as at 30th June, 1977	4	
	—	4
		35
		—

TABLE LXXI
FINANCIAL STATEMENT OF THE DIVISION OF PSYCHIATRIC SERVICES FOR THE YEAR ENDED 30TH JUNE, 1977
(Excluding Commonwealth Community Health Projects)

	Psychiatric Hospitals					Challinor Centre (Ipswich)	Training Centres for Intellectually Handicapped			Rehabilitation Clinics (Wacol)	Supervised Group Homes Subsidy (c)	Director's Office Psychiatric Clinics and Central Assessment Clinic	Total for Division
	Wolston Park (Brisbane)	Baillie Henderson (Toowoomba)	Mosman Hall (Charters Towers)	Basil Stafford (Wacol)	Villas excluding Basil Stafford		" Halwyn " (Red Hill)						
(A) EXPENDITURE FROM CONSOLIDATED REVENUE FUND	\$	\$	\$	\$	\$	\$	\$	\$	\$	\$	\$	\$	
Department of Health	13,093,728	6,454,185	1,577,904	5,297,370	..	..	..	..	(a)	67,167	1,047,898	27,538,252
Department of Works	189,716	209,074	19,582	100,665	(a)	..	..	..	(a)	39,377	..	558,414
	13,283,444	6,663,259	1,597,486	5,398,035	(a)	..	..	..	(a)	106,544	1,047,898	28,096,666
<i>Less</i>	153,554	68,115	21,484	48,610	(a)	..	..	..	(a)	..	..	291,763
Pharmaceutical benefits	13,129,890	6,595,144	1,576,002	5,349,425	(a)	..	..	..	(a)	106,544	1,047,898	27,804,903
Net Expenditure	1,316	688	217	491	141	(b) not occupied during year	..	..	94	Unavailable	..	2,947
Average Number Daily Resident	8,564.44	9,684.97	7,361.69	10,995.96	(a)	..	..	..	(a)	..	..	9,533.99
Cost per patient per annum—Gross	8,465.44	9,585.97	7,262.68	10,894.96	(a)	..	..	..	(a)	..	..	9,434.99
Cost per patient per day—Gross	23.46	26.53	20.17	30.12	(a)	..	..	..	(a)	..	..	26.12
Cost per patient per day—Gross	23.19	26.26	19.90	29.85	(a)	..	..	..	(a)	..	..	25.85
Nett													
(B) EXPENDITURE FROM LOAN FUND													
Department of Works	3,435,017	251,321	36,905	100,433	1,358,402	1,100,203	39,466	5,122	..	..	..	6,326,869
(C) COLLECTIONS													
Payments by Department of Veterans' Affairs for													
Repatriation Pavilion	864,902				..	..	..	..	..	..	..	864,902
Maintenance Charges—Other	1,142,029	748,994	227,223	539,121	(a)	..	..	..	(a)	..	..	2,657,367
TOTAL COLLECTIONS	2,006,931	748,994	227,223	539,121	(a)	..	..	..	(a)	..	..	3,522,269

(a) Costs incorporated in those of Wolston Park Hospital.
(b) Villas in Rockhampton, Maryborough, Toowoomba and Ipswich erected but not yet occupied.
(c) Operated by voluntary agencies for care of discharged psychiatric and alcoholic patients and intellectually handicapped persons.

DIVISION OF YOUTH WELFARE AND GUIDANCE

FULL-TIME CHILD PSYCHIATRIC SPECIALISTS

Senior Medical Director: B. J. PHILLIPS, M.B., B.S.(Qld.), F.R.A.N.Z.C.P., M.R.C.Psych., D.P.M.(London).

Regional Supervisor (North Queensland): R. A. GREEN, M.B., B.S.(Qld.), D.P.M.(Qld)—Townsville Centre.

Medical Directors (Brisbane):

A. B. SHEARER, M.B., B.S.(Qld), M.R.A.N.Z.C.P., M.R.C.P.(London), M.R.C.Psych., D.P.M.(Qld), F.A.C.M.A.—Returned to the Division from secondment to Health Department on 1-3-77.

J. P. FOLEY, M.B., B.S.(Qld), M.R.A.N.Z.C.P., D.P.M.(Qld), Grad.Dip.Bus.Admin.Q.I.T.—Wilson Youth Hospital

PART-TIME CHILD PSYCHIATRIC SPECIALISTS

JEAN BRYANT, M.B., B.S., D.P.M.(Syd.), M.R.A.N.Z.C.P.—Toowoomba Child Guidance Clinic, resigned 27-6-77.

B. BLICHARSKI, M.B., B.S., D.P.M.(Qld), M.R.A.N.Z.C.P.—Brisbane.

HELEN CONNELL, M.B.B.S.(London), D.C.H., B.Sc., D.P.M.(Melbourne), M.R.A.N.Z.C.P.

B. KLUG, M.B., B.S.(Qld), D.P.M.(Melb.), M.R.A.N.Z.C.P., resigned 31-12-76.

MARION MORRIS, M.B., B.S., M.R.A.N.Z.C.P., D.P.M.(Qld), D.C.H.(London)—Brisbane.

IRENE PHILLIPS, M.B., B.S.(Qld), M.R.A.N.Z.C.P., D.P.M.(Qld)—Brisbane.

D. C. WEBSTER, M.B., B.S.(Qld), M.R.A.N.Z.C.P., D.P.M.(Melb.)—Wilson Youth Hospital, resigned 30-6-77

Child Guidance is the medical speciality which treats disorders of behaviour, thinking and emotion in children. It is referred to by some as Child Psychiatry. The disorders treated which are approximately the same in various countries are classified by general world agreement.

The majority of patients seen at Child Guidance Clinics are pre-school and school children. Those with child guidance disorders make up about 10 per cent of the community of children.

Child Guidance treatment is really "Family Psychiatry—Child Centred", and various therapists are involved with the child psychiatrist in the treatment of the child and his family. The parents are involved in the treatment and sometimes they have to learn new child management methods.

Child Guidance is not based on the usual "medical model", but has developed from an adaptation system in which all factors in the environment and in the individual are considered in treatment.

The Child Guidance Specialist is a medical graduate with training in general and child psychiatry. Others involved in the treatment team come from diverse backgrounds.

The Division of Youth Welfare and Guidance is the section of the Department of Health which is responsible for Child Guidance Services in Queensland. These services are at present located in Brisbane, Toowoomba and Townsville and there are plans to have clinics in similar locations throughout the State.

The Division of Youth Welfare and Guidance supplies Child Guidance services directly to the community, but at least half of the cases would be referred by doctors, social workers and teachers. The Clinics work in close collaboration with general practitioners, teachers and others in the treatment of disturbed children and their families.

The Division of Youth Welfare and Guidance supplies Child Guidance services to:—

A. HEALTH

- (a) *Hospital orientated services* e.g. The Institute of Child Guidance, Brisbane; Institute of Child Guidance, Townsville; Youth Welfare and Guidance Centre, Toowoomba; Consultant Services to the Royal Children's Hospital.
- (b) *Community Child Guidance Clinics* e.g. Ashgrove, Enoggera, Nundah, Indooroopilly, Yeronga, Greenslopes, and Redcliffe.

B. EDUCATION

- (a) Tennyson Special School (run jointly with the Education Department).
- (b) Consulting services to schools, opportunity schools and pre-schools.

C. WELFARE

- (a) Wilson Youth Hospital (for delinquency)
- (b) Warilda (for children in care).
- (c) General e.g. Children's Services Department, Church Homes and Social Welfare Departments and Institutions generally.

Hospital Orientated Services

Some child guidance cases require the help from Hospital services. Consequently some facilities have to be built in collaboration with base hospitals, preferably a children's hospital. The Institute of Child Guidance in Brisbane was built in association with the Royal Brisbane Hospital complex. An Institute of Child Guidance has been built at Townsville and one is proposed for Toowoomba and Rockhampton in due course. A unit for acute child psychiatry has been built at the Royal Children's Hospital, Brisbane.

The various Institutes throughout the State will be in collaboration with base hospitals and will serve as a base from which psychiatric services will go to country towns.

Community Child Guidance Clinics

There are Community Child Guidance Clinics at present in the Brisbane suburbs of Ashgrove, Enoggera, Nundah, Indooroopilly, Yeronga and Greenslopes. There is also one at Redcliffe. There are plans to build similar clinics throughout the State where the population would warrant it.

Each clinic will serve a cluster of suburbs and have a staff of Child Guidance Specialists, a Psychologist and other paramedical staff. The clinic buildings are usually converted from ordinary houses and are quite suitable for the purpose.

The suburban Child Guidance Clinics are very popular with the public because of easy transport and the small intimate nature of the clinic. There is also easy local liaison with schools and kindergartens.

Each of the Community Child Guidance Clinics gives an out-patient service to its area. Children may attend once or several times a week.

Services to the Education Department and Schools

Since the creation of Child Guidance Clinics in the suburbs, the liaison between schools and the clinics has increased to the benefit of the children. Some 10 per cent of the children in the ordinary school would need Child Guidance treatment because of such things as neurological defects, dyslexia, emotional disturbance and behaviour disorders.

Some children attend the clinic while still attending school. Some of the more disturbed ones, who have had more intensive child guidance treatment, may be rehabilitated through the Tennyson Special School.

Much preventive work is done from the preschool institutions where cases are detected early and sent to the Child Guidance Clinics for treatment. It is felt that the close liaison between the Division of Youth Welfare and Guidance and various educational facilities is of preventive importance in dealing with children with mental health problems.

Services to Welfare Departments

The association between the Department of Children's Services and the Division of Youth Welfare and Guidance has been long-standing and a considerable amount of work is done by each Department for the other.

Of the children going into Institutions such as Wilson Youth Hospital, Westbrook and Warilda, it is evident that more than half are in need of Child Guidance treatment. Figures have shown that 30 per cent-40 per cent of the children have a history of some birth difficulty and final investigations show that about one quarter would have some organic brain dysfunction.

Of the delinquent girls going into Wilson Youth Hospital about 80 per cent would be emotionally disturbed in the opinion of the Child Guidance Doctors, and of the boys about two-thirds. Surveys in the past have indicated that the children in Warilda show a child psychiatric incidence of about 75 per cent in the older school children, and on the whole it is probable that about three-quarters of the children going into institutions need a Child Guidance assessment, and more than half would be needing Child Guidance treatment.

Delinquency services centre around Wilson Youth Hospital which has in-patient, out-patient facilities for boys and girls who appear before the Children's Court. Non-delinquent children are seen at the Institute of Child Guidance or at suburban clinics. The Division also sees cases from other welfare institutions such as Church Homes and considers that this work is of preventive value.

The Division in General

During the financial year 1976-77 the total number of new families seen was 3 427. Of these cases problems presented with boys in 2 375 cases, and in girls 1 052 cases. Total number of, in consultations, interviews, tests, investigations, treatments, etc., done by the Division during the year was 103 140. There has been a good recruitment of staff during the financial year, and this accounts for the increased amount of work done.

Staff Changes in 1976-77

Dr Shearer returned to the Division on 1-3-77, after organising the management Services Section for the Department of Health. Others who have rejoined the Division after gaining experience elsewhere were Dr O'Connor and Dr Masel.

Other doctors joining the Division during the financial year were Drs Bailey, Breakey, Coghlan, Collings, Eckersley, Haycock, Hoey, McBryde, Mogensen, G. Morris, Reid, Tucker, and Wills. Those that resigned during the year 1976-77 were Dr R. Anderson (Part-time), Dr C. Bennett, Dr J. Bryant (part-time), Dr B. Klug (part-time), Dr M. Masel, and Dr D. Webster (part-time).

THE INSTITUTE OF CHILD GUIDANCE—BRISBANE

The Brisbane Institute of Child Guidance is situated at Rogers Street, Spring Hill. It works in close co-operation with the Royal Brisbane Hospital.

The Institute has accommodation for Outpatients and Day Hospital patients but plans have been drawn for the building of an Inpatients section which should commence in the near future.

There are considerable numbers of children with severe behaviour problems who have been excluded from their schools and it is difficult to do anything with them by means other than residential care.

The Institute serves as a central Child Guidance Clinic particularly to the inner Brisbane areas. People from the country also come down to the Institute for consultation.

The functions of the Institute are divided into two special clinics, one for adolescents and the other for cases with disturbed brain function.

During the financial year the Institute of Child Guidance saw 744 new outpatients and their families. Of these 515 were boys and 229 were girls. There were 13 743 interviews, tests, examinations and treatment sessions conducted during the financial year. The Day Hospital at the Institute of Child Guidance treated 23 children.

Adolescent Clinic

The Adolescent Clinic at the Institute of Child Guidance was short staffed last financial year but recently the staff has been brought back to normal. The night clinics have been functioning again and more teenagers are now seen.

The clinic at the institute sees only the non-delinquent teenagers. There are clinics for the delinquent teenagers at Wilson Youth Hospital. The suburban clinics see primary school and pre-school children only.

Half of the day hospital at the Institute is reserved for the treatment of adolescent patients and the adolescent clinic has a special staff of its own.

Brain Function Clinic

The Brain Function Clinic specialises in the treatment of children with behaviour disorders which are possibly of an organic origin. The Children are assessed neurologically as well as psychiatrically by special investigations. Neuro-physiological assessments and treatment are also done, by a physiotherapist experienced in this field.

The brain function clinic sees patients mainly from younger age groups. Often the patients are hyperactive and difficult to handle with behaviour problems and tantrums. Treatment includes the use of drugs, diet therapy, behaviour modification and parental adjustment.

TOOWOOMBA YOUTH WELFARE AND GUIDANCE CENTRE

The Toowoomba Clinic provides a service to the Darling Downs region and to the Toowoomba General Hospital.

Until recently the Clinic was situated in the grounds of the Toowoomba General Hospital but has now been moved to 9 Tourist Road, Toowoomba where it will be working in close association with the Community Medicine Clinic.

There has been some shortage of medical staff for the clinic but this is likely to be improved in the near future.

During the financial year 216 new cases were seen, 143 were boys and 73 were girls. The staff at the Toowoomba Child Guidance Centre gave lectures to groups of parents and schools during the year.

TOWNSVILLE INSTITUTE OF CHILD GUIDANCE

The Townsville Institute of Child Guidance supplies child guidance services to North Queensland in general and also to the Townsville General Hospital. Recently the first stage of a new building for the Townsville Institute of Child Guidance was opened by the Honourable the Minister, Dr L. R. Edwards. The new building is very well appointed with modern facilities. Accommodation for residential treatment will be added at a later date.

During the financial year the Townsville clinic saw 482 new cases, 337 were boys and 145 were girls and the clinic during the year performed 9 479 examinations, tests and treatment sessions.

The Townsville Institute of Child Guidance has been very active in community mental health activities such as giving lectures, attending conferences, helping with organisations etc.

As the Townsville Institute of Child Guidance is the centre of North Queensland its size and importance will grow and it is hoped that some travelling clinic facilities will be given to the more inaccessible parts of North Queensland from the centre.

ASHGROVE CHILD GUIDANCE CLINIC

The Ashgrove Child Guidance Clinic is situated at 216 Coopers Camp Road, Ashgrove. It is the centre for child guidance services to the suburbs, Ashgrove, The Gap, St. John's Wood, Dorrington, Bardon, Jubilee, Ithaca, Red Hill, Paddington, Rosalie, Torwood, Auchenflower, Enoggera and Rainworth.

The Ashgrove Clinic has been fully staffed and functioning well for the last financial year. During the financial year 217 new cases were seen, 163 were boys and 54 were girls. During the year 7 309 examinations, tests and treatment sessions were carried out.

ENOGERA CHILD GUIDANCE CLINIC

The clinic is situated at 289 Wardell Street, Enoggera. The clinic supplies services to Newmarket, Alderley, Gaythorne, Mitchelton, Grovely, Keperra, Ferny Grove, Arana Hills, Bunyaville, Oxford Park, Everton Park, Stafford, Enoggera, Gordon Park, Grange, Wilston, Chermiside, Aspley, Dorrington, Windsor, Everton Hills, McDowall, Samford.

The building of the Enoggera Clinic is as yet not complete and facilities for more there will be required. However, it is fully staffed and during the year 206 new cases were seen, 147 were boys and 59 were girls. There were 6 026 consultations, examinations, tests and treatment sessions conducted.

NUNDAH CHILD GUIDANCE CLINIC

The clinic is situated on the corner of Sandgate Road and Donkin Street, Nundah and supplies services to the suburbs of Kedron, Chermside, Wavell Heights, Nundah, Aspley, Geebung, Zillmere, Albany Creek, Bald Hills, Toombul, Kalinga, Eagle Junction, Woolloowin, Clayfield, Albion, Ascot, Doomben, Eagle Farm, Pinkenba, Northgate, Virginia, Banyo, Nudgee, Windsor, Lutwyche, and Gordon Park.

The Nundah Child Guidance Clinic was officially opened on the 11th November, 1976, by the Honourable the Minister, Dr L. R. Edwards. The clinic has been renovated by the Works Department and the facilities are excellent.

The Nundah Child Guidance Clinic services a large area and during the year there was a total of 303 new cases, 213 were boys and 90 were girls. There were 5 209 consultations, examinations, tests and treatment sessions carried out.

INDOOROPILLY CHILD GUIDANCE CLINIC

The Indooroopilly Child Guidance Clinic is situated at 63 Clarence Road, Indooroopilly. The suburbs that this clinic serves are Taringa, Indooroopilly, Corinda, Graceville, Sherwood, Chelmer, Brookfield, Kenmore, Chapel Hill, Oxley, Darra, Jindalee, Long Pocket, Fig Tree Pocket, St. Lucia, Milton, Auchenflower, Toowong, and Inala.

The Indooroopilly Clinic has not yet been completed and more treatment facilities will have to be built.

During the year a total of 200 patients were seen, 141 were boys and 59 were girls. There were 4 269 consultations, examinations, tests and treatment sessions carried out.

YERONGA CHILD GUIDANCE CLINIC

The Yeronga Child Guidance Clinic is situated at 51 Park Road, Yeronga. The clinic has been completed now for some time and it has been fully occupied.

During the year 340 new cases were seen, of those 242 were boys and 98 were girls. There were 6 533 consultations, examinations, and treatment sessions carried out throughout the year.

Yeronga Child Guidance Clinic has been very heavily booked over the last financial year but with the opening of more clinics on the South side much of the stress will be removed.

GREENSLOPES CHILD GUIDANCE CLINIC

A building has been purchased at Curd Street, Greenslopes for the purpose of a Child Guidance Clinic. Work on this building has not yet been completed but the clinic will be opened early in the next financial year.

REDCLIFFE CHILD GUIDANCE CLINIC

The Redcliffe Child Guidance Clinic is situated at 9 Mein Street, Scarborough. The clinic gives a service to Redcliffe City, Sandgate, Bald Hills, Caboolture, Strathpine, Lawnton, Pine Rivers, Maroochy, Kilcoy, Landsborough, Kallangur, Petrie, Deception Bay, Morayfield, Burpengary, Dayboro, Maleny, Caloundra, Woodford, and Bribie Island.

The accommodation at the Redcliffe clinic is small but there is likely to be more accommodation given fairly early in the next financial year.

The demand for services from this clinic is extensive.

The clinic gives a service to the Bush Children's Health Scheme (82 children were seen during the year) and also to Redcliffe Hospital, Child Care Centres, etc. There is a very close liaison with the schools in the Redcliffe region.

During the year Redcliffe Child Guidance Clinic saw 218 new cases. Of these 162 were boys, and 56 were girls. 4 956 tests, examinations and treatment sessions were done.

WILSON YOUTH HOSPITAL

Wilson Youth Hospital is a child guidance hospital for the treatment of emotionally disturbed children who appear before the Children's Court. Children arrested by the Police are placed in Wilson Hospital or are remanded in custody.

The staff of the Division of Youth Welfare and Guidance examine and investigate and report on the children to the Director of the Children's Services Department.

Some of the children are detained in Wilson Youth Hospital for child guidance treatment. There is a variety of psychotherapeutic treatment at the hospital for disturbed members of the juvenile delinquency population.

The Educational Review Panel studies the educational state of each child. Child Psychiatric advice is given concerning rehabilitation which is carried out by the Children's Services Department after the child leaves.

During the year 254 new cases were admitted. Of these 148 were boys and 106 were girls. The number of outpatients seen during the year was 109, of these 72 were boys and 37 were girls. During the year there was a total of 37 321 investigations, treatment sessions and tests.

TENNYSON SPECIAL SCHOOL

Tennyson Special School was opened in 1973 and has had an enrolment of twelve pupils. The twelve children enrolled are chosen by a panel of Child Guidance Specialists and Guidance and Special Education Department Specialists.

Children at the Tennyson School have usually been treated by Child Guidance Clinics for severe emotional and nervous disorders and are being rehabilitated into their own schools through this special school.

Since 1973 there have been fifteen children passed through the school and successfully rehabilitated in their own school. Some have left school and successfully taken employment. One boy however, broke down after leaving school and has been receiving psychiatric care. Another boy has not done so well due to an adverse home environment.

The children passing through Tennyson school on admission to the Child Guidance Clinics are extremely disturbed emotionally and after treatment in the Clinic and rehabilitation in the School they had improved both scholastically and emotionally. It was noted that their personalities had improved also such as regarding their self image and behaviour as well as becoming more independent.

The staff of the Child Guidance Clinics feel that these children who have been successfully rehabilitated through Tennyson School would not have improved had they been sent to an ordinary school. Many of them would have broken down and come back for further treatment. The Tennyson School owes its success not only to the skilled staff from both departments but also from the careful selection of the children being sent there. Special programmes are worked out by the teachers at Tennyson School for these children and ongoing child guidance treatment is conducted.

ELECTROENCEPHALOGRAPHY SECTION

The electroencephalograph has been used by the Child Guidance Clinics for some years and is now situated at the Institute of Child Guidance, Rogers Street, Spring Hill. There is also a second machine used primarily at Wilson Youth Hospital.

There is a high incidence of abnormal electroencephalograph tracings in children attending Child Guidance Clinics. All cases which show bad behaviour with aggression, epilepsy, mental dullness, minimal cerebral dysfunction and conditions of this nature need an E.E.G. investigation.

The number of E.E.G. tracings done during the year was 985 and about half of these tracings were abnormal. Details of this can be seen in the Tables.

MENTAL HEALTH ACTIVITIES

The Division of Youth Welfare and Guidance has always had the policy of trying to prevent disorders in children rather than treating them at a later date. This is the philosophy behind the community clinics which concentrate on the smaller children with behaviour problems. The approach has been a family approach and in treating the entire family it is felt that preventive work is done. Clinics have been orientated towards detecting disorders as early as possible in life and treating the whole family. The preventive methods used are as follows:—

1. Early Detection and Treatment of Cases

Visits from Child Guidance Clinic staff to various schools and kindergartens detect many early problems. The activity of the clinics with the preschool and kindergartens have been particularly important.

Primary school children are being continually surveyed with the help of the School Health Services to find possibly emotionally disturbed families. Early detection and treatment is carried out also at Welfare Institutions.

2. Prevention of Relapse or Supervision

There are some children and families who require long term supervision. The supervision and support can prevent them from becoming worse and this may save them from institutional care. Some children can be rehabilitated ultimately

into the community in this way. The Day Hospital of the Institute of Child Guidance has from time to time over the years seen quite a number of children and supported them in this manner.

Another method of preventing relapse by supervision and support is through social work activity. The support, guidance and counselling by a Social Worker may prevent many of these families relapsing and also may prevent the institutionalising of many children.

3. Education in Child Raising Practices

Literature has been issued from time to time through the Health Educational Council on the advice of the Division of Youth Welfare and Guidance on the subject of raising children, or emotionally disturbed children and similar subjects. The Division has produced a booklet indicating the functions of the Child Guidance Clinic.

Doctors from the various Child Guidance Clinics are active in giving talks and lectures to professional groups, parent groups and organisations in the community on the subject of Child Guidance. Doctors go regularly to kindergartens and other places where they give talks and lead discussion groups and so on.

Contact between the doctors of the Community Child Guidance Clinics and schools, kindergartens and other organisations is helpful in this regard. More activity in the training in child raising practices will be done by the Division in the future.

TEACHING AND TRAINING OF PROFESSIONAL STAFF

The Division of Youth Welfare and Guidance has ongoing teaching and training for the professional staff working in the clinics. This includes child psychiatry, psychology, social work, therapies of various kinds etc. Most professional people come to the Child Guidance Clinics with theoretical knowledge only and on the job training and practical experience has to be acquired. This is done under the supervision of senior staff members.

Some teaching and training is done of University students also. The Psychology Department, the Social Work Department, the Speech Therapy Department and the Physiotherapy Department of the University send students for practical training under the supervision of clinic personnel.

Other professional personnel such as medical students, nurses and teachers attend also for lectures.

ACKNOWLEDGEMENTS

The Division of Youth Welfare and Guidance would like to express appreciation of the help given by other Government Departments, both State and Commonwealth. These Departments include the other Divisions of the Health Department, the Commonwealth Health Department, the Department of Children's Services and the various public hospitals especially the Royal Children's Hospital. Appreciation is also expressed of the services and co-operation of the Education Department, especially the Guidance and Special Education Branch and to head teachers of various schools, state and private. Appreciation is also expressed of the co-operation of the various kindergarten directors in the pre-school education centres. The help and co-operation given by the staff of the various Church Homes caring for children is also appreciated. The Division of Youth Welfare and Guidance is grateful for the great deal of help given by various organisations and individuals in the community.

TABLE LXXII
SHOWING TOTAL NUMBERS AND SEX OF NEW CASES FROM THE VARIOUS CENTRES DURING 1976-77

Name of Centre	Male	Female	Total
Institute of Child Guidance—			
Day Hospital	11	12	23
Adolescent	161	68	229
Brain Function Clinic	354	161	515
Toowoomba Child Guidance Centre	143	73	216
Townsville Child Guidance Centre ..	337	145	482
Redcliffe Child Guidance Clinic ..	162	56	218
Ashgrove Child Guidance Clinic ..	163	54	217
Yeronga Child Guidance Clinic ..	242	98	340
Indooroopilly Child Guidance Clinic	141	59	200
Enoggera Child Guidance Clinic ..	147	59	206
Nundah Child Guidance Clinic ..	213	90	303
Wilson Youth Hospital—			
Inpatients	148	106	254
Outpatients	72	37	109
Totals	2 294	1 018	3 312
Consultations for Other Departments, i.e.—			
School Health Services	73	27	100
Children's Hospital	8	7	15
GRAND TOTALS	2 375	1 052	3 427

TABLE LXXIII
SHOWING NUMBER OF EXAMINATIONS, INTERVIEWS, TREATMENTS, &c., BY THE VARIOUS PROFESSIONS

Centre	Psychiatrists			Psychologists			Social Workers		
	Boys	Girls	Total	Boys	Girls	Total	Boys	Girls	Total
Institute of Child Guidance	5 150	2 429	7 579	1 135	500	1 635	850	519	1 369
Toowoomba Child Guidance Centre	1 649	1 000	2 649	162	57	219	581	483	1 064
Townsville Child Guidance Centre	2 556	1 880	4 436	682	312	994	253	217	470
Redcliffe Child Guidance Clinic	2 072	903	2 975	281	216	497	515	340	855
Ashgrove Child Guidance Clinic	1 498	769	2 267	897	566	1 463	369	331	700
Yeronga Child Guidance Clinic	1 863	859	2 722	435	259	694	230	144	374
Indooroopilly Child Guidance Clinic	1 186	442	1 628	310	115	425	185	149	334
Enoggera Child Guidance Clinic	1 960	824	2 784	497	292	789	400	297	697
Nundah Child Guidance Clinic	1 364	744	2 108	284	79	363	274	158	432
Warilda Child Guidance Centre .. .. .	..	..	..	..	..	..	..	..	..
Wilson Youth Hospital—In-Patients	7 415	4 709	12 124	1 613	500	2 113	..	..	..
Wilson Youth Hospital—Out-Patients	479	189	668	65	16	81	..	..	..
Westbrook Training Centre .. .. .	..	..	..	..	..	..	..	..	..
Number of Outside People Given Lectures .. .. .	..	..	3 209	..	..	314	..	..	62
Bush Children's	61	21	82	..	..	..	..	..	..
Montrose Home	40	13	53	..	..	..	4	3	7
Tennyson School	29	18	47	..	..	..	4	3	7
TOTALS	27 322	14 800	45 331	6 361	2 912	9 587	3 665	2 644	6 371

TABLE LXXIII—continued

SHOWING NUMBER OF EXAMINATIONS, INTERVIEWS, TREATMENTS, &c., BY THE VARIOUS PROFESSIONS
—continued

Centre	Speech Therapists			Child Guidance Therapists			Medical Consultants		
	Boys	Girls	Total	Boys	Girls	Total	Boys	Girls	Total
Institute of Child Guidance	400	51	451	1 117	665	1 782	119	20	139
Toowoomba Child Guidance Centre	34	24	58	..	..	..	..	..	..
Townsville Child Guidance Centre	1 346	922	2 268	706	605	1 311	..	..	..
Redcliffe Child Guidance Clinic	416	154	570	..	..	..	..	..	..
Ashgrove Child Guidance Clinic	1 603	569	2 172	403	254	657	..	..	..
Yeronga Child Guidance Clinic	1 418	529	1 947	437	229	666	..	..	..
Indooroopilly Child Guidance Clinic	1 444	398	1 842	..	..	..	..	..	..
Enoggera Child Guidance Clinic	1 178	468	1 646	11	1	12	..	..	..
Nundah Child Guidance Clinic	1 247	407	1 654	400	182	582	..	..	..
Warilda Child Guidance Centre	159	86	245	..	..	..	..	..	..
Wilson Youth Hospital—In-Patients .. .. .	..	..	..	10 828	9 547	20 375	1 551	216	1 767
Wilson Youth Hospital—Out-Patients .. .. .	..	..	..	..	..	..	..	..	..
Westbrook Training Centre .. .. .	..	..	..	..	..	..	..	..	..
Number of Outside People Given Lectures .. .. .	..	..	265	..	..	..	..	..	..
Bush Children's .. .. .	..	..	..	..	..	..	..	..	..
Montrose Home .. .. .	..	..	..	..	..	..	..	..	..
Tennyson School .. .. .	..	..	..	..	..	..	..	..	..
TOTALS	9 245	3 608	13 118	13 902	11 483	25 385	1 670	236	1 906

Centre	Physiotherapist			E.E.G.			Totals		
	Boys	Girls	Total	Boys	Girls	Total	Boys	Girls	Total
Institute of Child Guidance	383	131	514	202	72	274	9 356	4 387	13 743
Toowoomba Child Guidance Centre	2 426	1 564	3 990
Townsville Child Guidance Centre	5 543	3 936	9 479
Redcliffe Child Guidance Clinic	44	15	59	3 328	1 628	4 956
Ashgrove Child Guidance Clinic	40	10	50	4 810	2 499	7 309
Yeronga Child Guidance Clinic	110	20	130	4 493	2 040	6 533
Indooroopilly Child Guidance Clinic	31	9	40	3 156	1 113	4 269
Enoggera Child Guidance Clinic	78	20	98	4 124	1 902	6 026
Nundah Child Guidance Clinic	53	17	70	3 622	1 587	5 209
Warilda Child Guidance Centre	159	86	245
Wilson Youth Hospital—In-Patients	89	65	154	21 496	15 037	36 533
Wilson Youth Hospital—Out-Patients	31	8	39	575	213	788
Westbrook Training Centre	14	..	14	14	..	14
Number of Outside People Given Lectures	3 850
Bush Children's	61	21	82
Montrose Home	44	16	60
Tennyson School	33	21	54
TOTALS	383	131	514	692	236	928	63 240	36 050	103 140

DIVISION OF DENTAL SERVICES

Director of Dental Services: G. R. McKELVEY, B.D.Sc.(Qld).
Deputy Director of Dental Services: R. G. BLAKE, B.D.Sc.(Qld).
Principal Dental Officer (Training): P. C. COMISKEY, B.D.Sc.(Qld), F.A.C.D.S.
Principal Dental Officer (Field Services): W. T. VIDERONI, B.D.Sc.(Qld).
Principal, School Dental Therapists Training Centre (Brisbane): G. E. GRUNDY, B.D.Sc.(Qld), F.A.C.D.S.
Principal, School Dental Therapists Training Centre (Townsville): R. J. PYLE, B.D.Sc.(Qld).
Senior Tutor Dental Officers:
L. F. BOURKE, B.D.Sc.(Qld).
P. A. DEFTEROS, B.D.Sc.(Qld).
N. H. EBERHARDT, B.D.Sc.(Qld).
C. J. R. MACKENZIE, B.D.Sc.(Qld)
R. G. B. SMITH, B.D.Sc.(Qld).
Senior Dental Officer (Preventive Programme): Appointment pending.

INTRODUCTION

The Division of Dental Services is involved in three separate and co-ordinated fields of activity, namely:—
(A) Queensland (Hospital Based) Dental Clinic Service;
(B) Queensland School Dental Services;
(C) School Dental Therapists Training Scheme.

(A) QUEENSLAND (HOSPITAL BASED) DENTAL CLINIC SERVICE

The Hospital Based Dental Clinic Service in Queensland was established to provide dental care to those persons whose economic circumstances make it difficult for them to obtain private dental care and for those, at all income levels, living in areas where no private dental practice exists.
Large areas of the Northern and Western parts of the State are, in the absence of private dental practice, dependent upon the Department of Health to provide a dental service.
A Means Test is applied to determine eligibility to receive treatment, other than emergency treatment, in areas where private dental practice exists. This same Means Test is used to determine income levels at which fees must be paid by patients receiving treatment in areas with no private dentist.
The Hospital Dental Clinic Service provides a comprehensive general practitioner service which is extended to the provision of certain specialist services at Dental Hospitals and at a number of larger base Dental Clinics. In particular part-time consultant orthodontists now provide services at the Bundaberg, Cairns, Rockhampton, Southport, Toowoomba and Townsville Dental Clinics while full-time orthodontic staff is employed at the Brisbane Dental Hospitals.

The relatively low density of population in much of the State, other than in coastal areas, can require one dental team to service two or more centres. This part-time arrangement is also necessary when services are provided for prisons, special hospitals, aged persons homes, and certain other institutions.
Part-time operation of Clinics, although unavoidable adds to the difficulties in providing dental services. Duplication of facilities, travelling expenses and other outlays inevitably increase costs.
Although many part-time services are conducted without requiring staff to be absent from base overnight, there are certain locations where this is necessary and some where absences may extend to some weeks. Such arrangements are not always helpful in staff recruitment.

Difficulties have been experienced in maintaining continuous dentist and dental technician staffing of clinics in some western areas in spite of efforts to recruit staff by Hospital Boards and by this Department. Dental Scholarships offered each year alleviate the position in relation to dentists while Dental Technician Apprenticeship training within Dental Hospitals and Dental Clinics, contributes significantly to the availability of qualified dental technicians.

With the increasing sophistication of dental equipment over recent years its effective maintenance has become a major consideration within the State's Dental Services.

The Dental Equipment Servicing Section now operated by the Division of Health and Medical Physics on behalf of the Dental Services must improve the latter's efficiency. This new arrangement is also expected to have a significant effect on the morale of dental staff, operating in country areas, who will be spared some of the frustrations previously associated with equipment failures. The dental equipment servicing teams are in the process of systematically moving through the State but must overcome a large backlog of servicing before a satisfactory equipment status can be claimed.

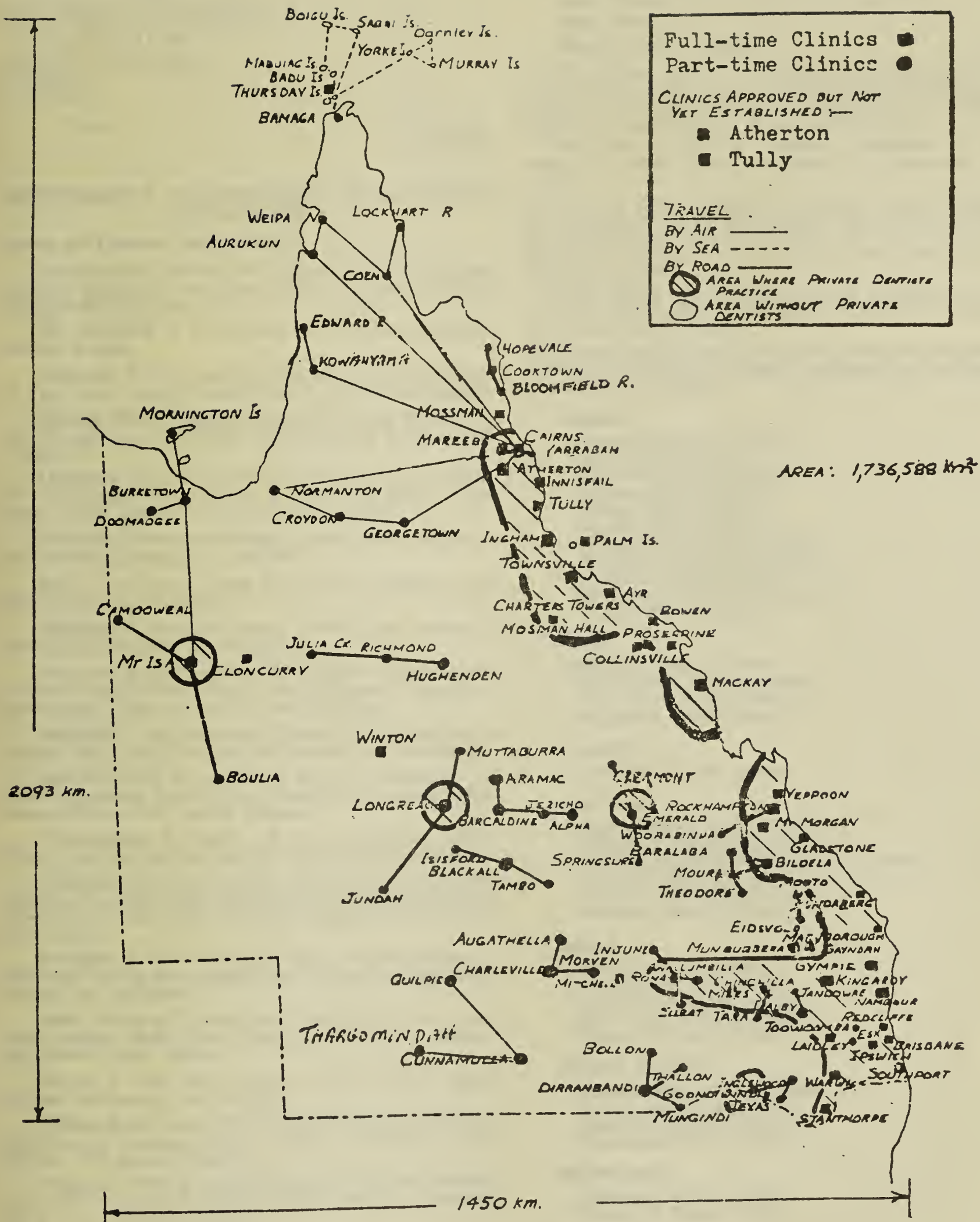
During the year the Director of Dental Services or the Deputy Director of Dental Services visited the following centres in connection with Dental Services in those areas. Bollon, Burketown, Cairns, Croydon, Dalby, Dirranbandi, Doomadgee, Gympie, Ipswich, Jandowae, Kingaroy, Mornington Island, Mount Isa, Mungindi, Nambour, Normanton, Redcliffe, St. George, Southport, Thallon, Toowoomba and Townsville.

QUEENSLAND DENTAL CLINICS

Dental Hospitals	.. .. .	3
Full-time Dental Clinics (including 3 attached to Dental Hospitals)	.. .. .	36
Part-time Dental Clinics	.. .. .	78
Service provided by Private Dentist in his own surgery	.. .. .	1
Centres visited utilizing Mobile Dental Clinic or portable equipment	.. .. .	29
		<hr/> 147 <hr/>

DENTAL STAFF

Approved Establishment (Dentists)—Queensland Dental Hospitals and Dental Clinics					
NORTH BRISBANE HOSPITALS BOARD—					
Brisbane Dental Hospital, Mobile Dental Clinic and Sandgate Dental Clinic	..				32
Children's Dental Hospital	..	..	..		13
SOUTH BRISBANE HOSPITALS BOARD—					
South Brisbane Dental Hospital, Wynnum Dental Clinic, Inala Dental Clinic	..	..			25
WOLSTON PARK SPECIAL HOSPITAL, including CHALLINOR CENTRE	..	..	..	..	2
COUNTRY DENTAL CLINICS—					
Full-time Dentists	..	..	..	..	81
Part-time Dentists	..	..	..	..	4
Part-time Consultant Specialists	..	..			7
Private Dentist providing dental services in his own surgery (part-time)	..	..			1
TOTAL	..	..	..	..	<hr/>153 full-time 12 part-time <hr/>



Approved Establishment (Dental Technicians)—Queensland
Dental Hospitals and Dental Clinics

NORTH BRISBANE HOSPITALS BOARD—						31
Brisbane Dental Hospital						
Children's Dental Hospital						
Sandgate Dental Clinic						
SOUTH BRISBANE HOSPITALS BOARD—						13
South Brisbane Dental Hospital						
Wynnum Dental Clinic						
COUNTRY DENTAL CLINICS—						
Full-time .. .. .	..	..	..	..	..	71
Part-time .. .. .	..	..	..	..	..	2
TOTAL						115 full-time
						2 part-time

IMPROVEMENTS AND EXTENSIONS TO THE DENTAL
CLINIC SERVICE

Actual and Proposed during 1976-77

Improvements, including the replacement of major items of dental equipment, were made within a number of Dental Clinics during the year.

The following is a summary of the more significant building projects:

Atherton: Work is nearing completion on the provision of a new single surgery Dental Clinic at the Atherton Hospital.

Brisbane Dental Hospital: Alterations to the Extractions, Oral Surgery and Anaesthetics Sections of the Hospital were completed.

Charleville: Tenders have been invited for the construction of a two-surgery Dental Clinic to replace an existing single surgery Clinic attached to the Charleville Hospital.

Clermont: A new single surgery Dental Clinic attached to the Clermont Hospital was completed.

Esk: A new single surgery Dental Clinic attached to the Esk Hospital was completed.

Gayndah: A new single surgery Dental Clinic attached to the Gayndah Hospital was completed.

Inala: The Inala Community Health Centre which includes a three-surgery Dental Clinic was completed, replacing a three-surgery Clinic located in leased premises.

Innisfail: A new two-surgery Dental Clinic replacing an existing clinic within the Innisfail Hospital was completed.

Ipswich: Work is proceeding on the construction of a new six-surgery Dental Clinic replacing an existing three-surgery Clinic at the Ipswich Hospital.

Maryborough: Re-location of the three-surgery Dental Clinic within the Maryborough Hospital is close to completion.

Nambour: Working Drawings and Specifications for the provision of a four-surgery Dental Clinic to replace an existing two-surgery Dental Clinic within the Nambour Hospital are under review.

Redcliffe: A new five-surgery Dental Clinic replacing a previously existing three-surgery Clinic attached to the Redcliffe Hospital was completed.

Tully: Working Drawings and Specifications for a new single surgery Dental Clinic attached to the Tully Hospital are presently under review.

Wacol: A new dental clinic at H.M. Prison Wacol became functional during the year.

Wolston Park: A new three-surgery Dental Clinic replacing an existing two-surgery Clinic is under construction at the Wolston Park Special Hospital.

Yeppoon: Work is nearing completion on the provision of a new two-surgery Dental Clinic to replace an existing Clinic at the Yeppoon Hospital.

(B) QUEENSLAND SCHOOL DENTAL SERVICES (FIELD
SERVICES)

Approved Establishment

Principal Dental Officer (Field Services)	1
Senior Dental Officer (Preventive Programme)	1
Dental Officers	29
School Dental Therapists	58

The present goal of the School Dental Service is to provide regular dental care for all Queensland Primary School Children by the early 1980's. This service is to be provided without fee and within the School environment.

With this in mind an ambitious programme for the training of School Dental Therapists is in operation (see below).

So as to provide facilities for School Dental Therapists upon graduation and for the Dentists under whose direction and control School Dental Therapists will work, Static and Mobile School Dental Clinics are being provided progressively throughout the State.

Static School Dental Clinics will be established in the grounds of larger schools while Mobile School Dental Clinics will service smaller schools.

At the close of the financial year, Static School Dental clinics were in operation or under construction in the grounds of the following schools:—

Brisbane

- Aspley East Primary School
- Inala Primary School
- Inala West Primary School
- Kingston Primary School
- Nudgee Primary School
- Nundah Primary School
- Richlands East Primary School
- St. Marks Convent School Inala
- Serviceton Primary School
- Serviceton South Primary School
- Virginia Primary School

Cairns

- Balaclava Primary School
- Cairns North Primary School
- Cairns West Primary School
- Parramatta Primary School

Charleville

- Charleville Primary School

Gold Coast

- Biggera Waters Primary School
- Broadbeach Primary School
- Guardian Angels Convent School, Southport
- Labrador Primary School
- Musgrave Hill Primary School
- Southport Primary School

Ipswich

- Brassall Primary School
- Bundamba Primary School
- Ipswich East Primary School
- Ipswich North Primary School
- Silkstone Primary School

Redcliffe Peninsula

- Clontarf Beach Primary School
- Humpybong Primary School
- Kippa-Ring Primary School
- Scarborough Primary School

Rockhampton

- Allenstown Primary School
- Frenchville Primary School

Toowoomba

- Harlaxton Primary School
- Rangeville Primary School
- Toowoomba East Primary School
- Toowoomba North Primary School

Townsville

- Townsville Central Primary School
- Wulguru Primary School

Woodridge

- Woodridge Primary School
- Woodridge North Primary School

Yeppoon

- Yeppoon Primary School.

TABLE LXXIV
STATISTICS—QUEENSLAND DENTAL CLINICS—
1976-77

ATTENDANCES—					
Adults .. .. .	..	..	..	..	288 727
School Children .. .. .	..	..	..	..	134 441
Pre-school children .. .. .	..	..	..	..	10 315
Total .. .. .	..	..	..	..	433 483
Teeth Extracted .. .. .	..	..	..	..	66 531
Restorations .. .. .	..	..	..	..	152 772
Dentures .. .. .	..	..	..	..	24 380
Dentures repaired .. .. .	..	..	..	..	11 207

Tenders have also been invited for the construction of School Dental Clinics in the grounds of the Berserker Street Rockhampton and the Roma State Primary Schools.

Site Plans have been prepared for a number of additional School Dental Clinics proposed for construction during 1977-78.

Ten additional Mobile School Dental Clinics were commissioned during the year giving a total in operation of fifteen. A further ten Mobile Dental Clinics are currently under construction. It is proposed to add further to the number of Mobile Dental Clinics during the following financial year and in particular to introduce two-surgery Mobile Dental Clinics to facilitate the extension of the School Dental Therapy Scheme to certain country areas.

One of the four Rail Dental Clinics, namely that servicing schools, principally smaller schools, on or close to the rail line west of Oakey, was extensively renovated and re-equipped during the year. The dental team now staffing this Rail Clinic consists of a dentist, a school dental therapist and a dental assistant.

It is proposed to carry out similar work on the Rail Dental Clinic operating west from Rockhampton during the coming year. The other Rail Dental Clinics were renovated in recent years.

Portable Dental Equipment formerly used extensively in the Service is now being used to a limited and decreasing extent, being supplanted by fully equipped Mobil Dental Clinics in most situations. Portable Dental Equipment remaining in use is being progressively updated as necessary.

Hospitals Boards have provided valuable assistance to the School Dental Service permitting a wider geographical expansion of the School Dental Therapy programme than would otherwise have been possible at this stage of the programme's development. Thus the Rockhampton, South Brisbane and Toowoomba Hospitals Boards have agreed to the Dentists-in-Charge of the Yeppoon, Inala and Toowoomba Dental Clinics being involved as District Dental Officers within the School Dental Service on a part-time basis. This type of arrangement which is applicable while School Dental Therapist numbers in the particular Districts remain low, will be extended to the Cairns and Rockhampton Dental Districts in the coming financial year when the first School Dental Clinics now under construction in those centres are completed. At a time when recruitment of dentists is difficult, Hospitals Boards' co-operation in this manner has been indispensable.

Prior to each Hospital dentist's involvement with the School Dental Service, a period of "orientation" is spent within a School Dental Therapy Training Centre and an established Dental District.

Apart from this direct involvement of Hospital dentists, co-operation between the Hospital Service and the School Dental Service has been encouraged wherever the School Dental Service extends to areas where a Hospital based Dental Clinic is in operation. In all instances full co-operation from Hospital Boards and from the dentists concerned has been forth-coming.

(C) SCHOOL DENTAL THERAPISTS TRAINING SCHEME

Approved Establishment

<i>Dentists</i>	
Principal Dental Officer (Training)	1
Principals, Training Centres, Brisbane and Townsville	2
Senior Tutor Dental Officers—	
Brisbane	4
Townsville	2
Tutor Dental Officers—	
Brisbane	14
Townsville	5
<i>School Dental Therapists</i>	
Tutor School Dental Therapists—	
Brisbane	4
Townsville	2

The planned rapid expansion of the School Dental Service would not be possible without a large workforce of School Dental Therapists who will, working under the general direction and control of dentists, provide most of the dental treatment requirements for children enrolled with the Service. By restricting their range of duties to the more routine dental tasks, School Dental Therapists are trained to a very high degree of competence within a period of approximately two years in a concentrated but thorough training course. Both the range of duties and the course of training of School Dental Therapists are those approved by the Dental Board of Queensland.

Two major Training Centres, at Yeronga in Brisbane and Vincent in Townsville and two subsidiary Clinical Training Centres in Brisbane at Stafford and Holland Park are now fully functional although a number of vacancies for dentists remain unfilled.

A total of 94 (Brisbane 66, Townsville 28) School Dental Therapists Trainees were enrolled for the First Year of the course in 1977, while 76 (Brisbane 55, Townsville 21) trainees entered the Second Year of their course.

A total of 22 School Dental Therapists graduated in January, 1977, from the Second Course to be conducted by the Brisbane Training Centre. At a function at the Yeronga Centre, the Honourable the Minister for Health presented Certificates and Badges.

The first group of School Dental Therapists to complete their training at the Townsville Training Centre will graduate in 1978.

All four Dental Therapy Training Centres provide dental services to a number of schools, both State and non-State, in their particular districts, children being brought to the Centres by School Dental Service mini-buses attached to each Training Centre.

The co-operation of lecturers from other Departments and other Divisions in the Department of Health is acknowledged.

These lecturers included:—

Brisbane:—

- Mr L. Hinsch and Mr M. Dobson—Division of Health and Medical Physics
- Mr P. Hindson—Division of Health Education
- Dr Julien—Division of Youth Welfare and Guidance
- Dr J. McFarlane—Director, Division of Maternal and Child Health
- Mr G. Nimmo—Kelvin Grove, College of Advanced Education

Townsville:—

- Dr R. Green—Division of Youth Welfare and Guidance
- Sister M. Hughes—Maternity Section, Townsville General Hospital
- Mr G. Muller—Townsville College of Advanced Education.

Organised visits were made by trainees in Brisbane during the year to the Spastic Centre, School for the Deaf, Pre-School Centres, Mater Children's Hospital, Sub-Normal Children's Association and the University of Queensland Dental School while in Townsville visits have been made to date to a Maternal and Child Health Clinic and to the Townsville General Hospital.

Assistance being provided by the North Brisbane and South Brisbane Hospitals Board in making dental staff available, on a part-time basis, to assist in tutorial duties in Brisbane Training Centres, until such time as full staffing is achieved, is also gratefully acknowledged.

An "Open Day" was held at the Yeronga and Townsville Centres in the latter part of 1976 and proved successful in attracting secondary school students, their parents and other interested persons.

TABLE LXXV						
STATISTICS—SCHOOL DENTAL SERVICES, 1976-77						
Total Attendances	112,655					
Number of courses of treatment	28,061					
Topical Fluoride applications	33,374					
Restorations	83,354					
Extractions—deciduous teeth	9,821					
Extractions—permanent teeth due to caries	1,836					
Extractions—permanent teeth for orthodontic reasons	215					
Endodontic and similar treatments	1,895					

PREVENTIVE DENTISTRY

Most dental disease is preventable and it would appear that there is room for optimism that an increasing percentage of the community is recognising this fact with practical effect.

There is however no room for complacency. Much remains to be done to educate the public in relation to the value and attainability of dental health and in particular to motivate individual members of the public to practice proven dental preventive measures.

In this area of endeavour the Division of Health Education of the Department of Health (replacing the Queensland Health Education Council) is continuing its efforts on a community level and the Division of Dental Services has been pleased to co-operate.

The major community dental health education effort this year was "Dental Health Week" (6th-10th June, 1977), a project initiated by the Australian Dental Association. The Division of Dental Services contributed by placing a Mobile Dental Clinic on display in the Brisbane City Square during this period. Three School Dental Therapists were in attendance.

The School Dental Service remains completely dedicated towards prevention. It is hoped not only to influence children towards personal preventive care while they remain within the School Dental Service but to motivate them to continue this involvement subsequently and at the same time, hopefully to motivate parents in relation to their own dental health.

Fluoridation in Queensland remains restricted to approximately 9 per cent of the population. A survey of the caries experience of lifetime residents of Townsville after 10 years of Fluoridation which was published during the year in the Journal "Community Dentistry and Oral Epidemiology" demonstrates the manner in which fluoridation, if more widespread in this State, would simplify the task of the School Dental Service and significantly reduce its costs.

Quoting from that survey:—

"The results from this study confirmed what is already known about the beneficial effects of fluoride in reducing the prevalence of dental caries. The improvement noted in the teeth of 6 year old children in Townsville in 1969, five years after fluoridation began, has now been extended to include all children up to and including children aged 14 years. The percentage reductions in caries experience of both primary and permanent teeth are greatest in 6 and 8 year olds but even in 14 year olds a reduction of 45 per cent DMT teeth is substantial particularly when it is noted that the absolute reduction is of the order of 5 teeth per child. It should also be noted that 14 year olds of 1975 would not have had the full benefit of fluoridation as they would have on average been 4 years old when the public health measure was instituted in 1965."

LABORATORY OF MICROBIOLOGY AND PATHOLOGY

Director: J. I. TONGE, M.B., B.S., D.C.P., F.R.C.P.A.

Deputy Director: M. J. J. O'REILLY, M.B., B.S., F.R.C.P.A.

Pathologists:

A. DAVISON, M.B., B.S., F.R.C.P.A.

I. S. WILKEY, B.Sc., M.B., B.S., LL.B., F.R.C.P.A.

A. J. ANSFORD, M.B., Ch.B., D.C.P., F.R.A.C.P., F.R.C.P.A.

Medical Microbiologist: A. T. C. BOURKE, M.D., Dr.P.H., F.R.C.P.A.

Laboratory Supervisor: D. J. W. SMITH, M.Sc.

Senior Scientist (Biochemistry): H. R. M. SELF, B.App.Sc.

Senior Scientist (Virology): I. COOK, M.Sc., M.A.S.M.

Senior Scientist (Serology): N. D. STALLMAN, B.Sc., M.A.S.M.

Senior Scientist (Bacteriology): Y. M. COSSINS, B.App.Sc.

Senior Scientist (Mycobacteriology): Z. M. BLACKLOCK, B.Sc.

Senior Scientist (Haematology): A. B. FINDLAY, F.A.I.M.T.

INTRODUCTION

The laboratory continues to supply a free diagnostic pathology service for the whole of the State and in certain specialised fields acts in a consultant capacity for interstate and overseas institutions. The laboratory is the W.H.O./F.A.O. Leptospirosis Reference Centre for Queensland and one of the two Australian Reference Laboratories for the Atypical Mycobacteria. It is the only clinical diagnostic virology laboratory in Queensland and is the reference laboratory for clinical serology, public health microbiology and forensic biology.

A continuing and active public health role is played in the monitoring of foods and waters and in the investigation of outbreaks of infectious disease and food poisoning. During the year the resources of the laboratory were fully mobilised and facilities were strained during the investigation and control of an outbreak of cholera more fully described later in this report. Part of the animal house on the eighth floor has been adapted for a public health laboratory and work is expected to be completed shortly. The opening of this facility will relieve the overcrowding in the present bacteriology section and will enable a more comprehensive and efficient service to be given.

The biological aspects of forensic science developed into a full-time laboratory service in 1973 and the scientists involved are in heavy demand for assistance in the detection and prosecution of crime.

Since 1972, active supervision of pathology services in country areas has been undertaken. Several new laboratories have been established, existing services have been upgraded and improvements in staffing and equipment have been made. It is planned to continue these activities so that country residents may be provided with the rapid, efficient and comprehensive pathology services which are available in the metropolitan area.

During the latter part of 1976 Telex was installed in the laboratory and in 19 country hospitals. Telex had been installed previously in the Administration section of the Health Department and in the four Commonwealth Health Laboratories in Queensland. This system is now in regular use for the transmission of pathology reports to country hospitals and is available for general communication within the Department and with other installations in Australia and overseas.

The help given throughout the year by the Government Chemical Laboratory, the metropolitan hospitals, the Queensland Institute of Medical Research, the Queensland Institute of Technology, C.S.I.R.O., the Institute of Medical and Veterinary Science in Adelaide, the Institute of Clinical Pathology and Medical Research at Lidcombe, the Australian Radiation Laboratory, the Commonwealth Serum Laboratories and the Commonwealth Health Laboratories is gratefully acknowledged.

STAFF AND GENERAL

The staff of the laboratory and the Institute of Forensic Pathology consists of 6 medical officers, 1 graduate laboratory supervisor, 7 senior scientists, 21 science graduates and technologists, 27 laboratory technicians and assistants, 26 cadets and laboratory attendants, 16 attendants, 1 nursing sister, 14 clerical staff and 3 cleaners.

The Director is a member of the Council of the Queensland Institute of Technology. The Deputy Director is Vice-Chairman of the Red Cross Blood Transfusion Committee and a member of the Queensland Perinatal Mortality Committee. Dr Davison is a member of the Maternal Mortality Committee and Dr Ansford of a committee to enquire into deaths associated with anaesthesia. Mr N. D. Stallman is in charge of the W.H.O./F.A.O. Leptospirosis Reference Laboratory.

The pathologists on the staff act as Regional Aviation Pathologists for the Department of Transport and the R.A.A.F. and travel to the crash site to perform autopsies on victims of air crashes in any part of Queensland. They also give a course of lectures on Forensic Pathology in the University of Queensland and post-mortem demonstrations to dental students, ambulance personnel and police recruits. Dr A. J. Ansford is a tutor in Pathology at the Medical School and other staff members give lectures at the University of Queensland, the Queensland Institute of Technology and the Police Academy. Members of the Tuberculosis laboratory staff have presented papers at thoracic clinical meetings at Prince Charles Hospital.

During the year Dr I. S. Wilkey obtained the degree of LL.B. Dr A. T. C. Bourke was made a Fellow of the Royal College of Pathologists of Australia and was granted by the W.H.O. the Order of the Bifurcated Needle in recognition of his work in smallpox eradication and Mr R. Tinniswood passed the qualifying examination for the M.Sc. degree.

Mr R. Wallace resigned in August, 1976, to join the staff of the Queensland Agricultural College and his place on the Committee on Microbiological Aspects of Food of the Standards Association of Australia and on the Food Microbiology Subcommittee of the N.H.M.R.C. has been taken by Dr A. T. C. Bourke. The Director resigned from the Bacteriological Subcommittee of the National Tuberculosis Advisory Council and his place has been taken by Mrs Z. M. Blacklock. Mr I. Cook, Mr N. Stallman, Mrs M. Weimers and Dr A. T. C. Bourke were admitted as Members of the Australian Society for Microbiology. During the year Dr I. S. Wilkey has served on the Joint Pathology Working Party inquiring into accreditation of laboratories.

The laboratory was represented at the following conferences and meetings through the year:—

Eighth Human Cytogenetics Conference, Adelaide (J. Bell);

Annual Meeting, Royal College of Pathologists of Australia, Brisbane (Symposium on Pyrexia of Unknown Origin, J. I. Tonge, M. Weimers, I. Cook, N. D. Stallman);

International Conference on Alcohol, Drugs and Traffic Safety, Melbourne (J. I. Tonge);

Fifth National Forensic Science Society Symposium, Melbourne (L. C. Freney);

Annual Convention of Food Science and Technology, Surfers Paradise (M. Leverington);

Annual Meeting, Australian Society of Microbiology, Melbourne (I. Cook, R. Tinniswood).

Professor A. K. Mant, Head of the Department of Forensic Medicine, Guy's Hospital, London, visited Brisbane on 8-11th February, 1977, as a guest of the State Health Department. Professor Mant attended a number of meetings with officers of the Health, Transport, Police and Justice Departments and contributed to discussions on road safety, forensic science and police investigation. While in Brisbane he gave evidence before the Criminal Law Inquiry on the use of scientific techniques in police investigation. He also visited the Institute of Forensic Pathology and the Laboratory of Microbiology and Pathology.

SEROLOGY

Introduction

Serological investigations increased by ten per cent this year as compared with a 32 per cent rise in the previous year. (This reduced increment could be due to more hospital laboratories performing the V.D.R.L. screen test and, consequently, referring only reactive sera or problem patients to this laboratory for more specific tests. The reduction could also be due to the increase in range of viral antigens used for serological screening in other laboratories.) An assessment of results shows that a diagnosis was obtained in ten per cent of patients. This year a serological test for hydatid disease was introduced.

Q. Fever

Four hundred and eighteen recent infections were diagnosed in this laboratory during the year, an increase of 104 on last year's figure. Of these, 365 were from Queensland and 53 from New South Wales. A fourfold rise in titre in paired sera or a titre of 1:64 or greater, in a single serum specimen was regarded as being diagnostic. The geographical and occupational distributions are set out in Tables LXXVI and LXXVII.

Four patients were diagnosed as having possible Q. fever endocarditis.

Patient No. 1 was a 52-year-old meatworker (and an ex-farmer) from the Boonah area. He was admitted to hospital for investigation of mitral incompetence or possible bacterial endocarditis. His three serum specimens each had an antibody titre of 1:256 to Q. Phase I antigen, but only a titre of 1:32 to Q. Phase II antigen.

Patient No. 2, a 52-year-old dairy farmer mentioned in the 1974-75 annual report, underwent aortic valve replacement in 1973. His paired sera in 1974 showed a diagnostic rise to Q. Phase II antigen, and in 1975 antibodies to Q. Phase I and II antigens were present to a titre of 1:32 and 1:64 respectively. Tests carried out during the current year showed a further rise in titre, to a level of 1:512 or greater, to both Q. Phase I and II antigens.

Patient No. 3, a 38-year-old housewife from Tara, was admitted early this year with possible sub-acute bacterial endocarditis. Subsequent serum samples showed a rise in Q. Phase II titre from 1:32 to 1:128 and a stationary Q. Phase I titre of 1:128. Although she had no known contact with animals, she did give a vague history of visiting a farm where she drank unpasteurised milk 15 months before onset of symptoms.

Patient No. 4 was a 36-year-old meatworker from Tamworth. In 1971 he had diagnostic antibody titres of 1:64 and 1:128 to Q. Phase II antigen. Samples submitted this year had antibody titres of 1:128 to Q. Phase II antigen and 1:256 and 1:512 or greater to Q. Phase I antigen. The only available history, to date, is that the patient is seriously ill and has a heart murmur. However, follow-up serum specimens, together with additional information are expected.

One additional case of Q. fever is of interest. A 64-year-old male clerk employed at a meatworks had a valve prosthesis inserted for aortic incompetence in 1974. At that time he had no demonstrable antibodies to Q. fever. During the current year he became febrile and serum taken a week after onset had an antibody titre of 1:256 to Q. Phase II antigen and a titre of 1:64 to Q. Phase I antigen. Since this patient has an early history similar to that of patient No. 2, further serological studies at regular intervals have been advised.

TABLE LXXVI
GEOGRAPHICAL DISTRIBUTION OF Q. FEVER CASES
(1st July, 1976 to 30th June, 1977)

District						Number
<i>Queensland—</i>						
Metropolitan	..	..	..	..	..	71
Moreton	..	..	..	..	..	51
Maryborough	..	..	..	..	..	9
Rockhampton	..	..	..	..	..	54
Mackay	..	..	..	..	..	2
Townsville	..	..	..	..	..	39
Cairns	..	..	..	..	..	71
Darling Downs	..	..	..	..	..	61
Roma	..	..	..	..	..	6
Central West	..	..	..	..	..	5
South West	..	..	..	..	..	4
Total	..	..	..	..	..	365
<i>New South Wales—</i>						
Northern Rivers	..	..	..	..	..	28
New England	..	..	..	..	..	8
Coffs Harbour	..	..	..	..	..	2
Newcastle	..	..	..	..	..	15
Total	..	..	..	..	..	53
GRAND TOTAL	..	..	..	..	..	418

TABLE LXXVII
OCCUPATIONAL DISTRIBUTION OF Q. FEVER CASES
(1st July, 1976 to 30th June, 1977)

Occupation						Number
Meat Industry	..	..	..	..	..	291
Dairy Industry	..	..	..	..	..	54
Other	..	..	..	..	..	37
Unspecified	..	..	..	..	..	36
TOTAL	..	..	..	..	..	418

Brucellosis

Brucellosis was diagnosed in 48 patients during the year, 37 from Queensland and 11 from New South Wales. A four-fold rise in titre in paired specimens or a titre of 1:128 or greater in a single specimen using the agglutination test was regarded as being diagnostic. The geographical distribution of these cases is shown in Table LXXVIII. No cases of chronic brucellosis were detected this year.

TABLE LXXVIII
BRUCELLOSIS INFECTIONS ON SEROLOGICAL EVIDENCE
(1st July 1976—30th June 1977)

Locality						Number
<i>Queensland—</i>						
Metropolitan	..	..	..	..	..	14
Moreton	..	..	..	..	..	12
Rockhampton	..	..	..	..	..	4
Townsville	..	..	..	..	..	1
Cairns	..	..	..	..	..	2
Darling Downs	..	..	..	..	..	3
Roma	..	..	..	..	..	1
Total	..	..	..	..	..	37
<i>New South Wales—</i>						
Northern Rivers	..	..	..	..	..	5
New England	..	..	..	..	..	1
Newcastle	..	..	..	..	..	5
Total	..	..	..	..	..	11
GRAND TOTAL	..	..	..	..	..	48

Chlamydial Infections

Three cases of chlamydial infection were diagnosed during the year. A fourfold rise in titre in paired sera or a titre of 1:128 or greater in a single specimen was regarded as diagnostic. Since the antigen used is group specific and no clinical information was available, no precise diagnosis could be made.

Typhus

Two cases of scrub typhus, one from North Queensland and the other from Papua were diagnosed this year. Both patients had clinical histories consistent with that infection. Diagnosis was based on either a fourfold rise in titre or a titre of 1:128 or greater in a single serum specimen when tested against *Proteus mirabilis* OXK antigen.

Eight patients had either a fourfold rise in titre or a titre of 1:128 or greater in a single serum specimen to *Proteus vulgaris* OX19 antigen. Negative results were obtained when specimens from these patients were tested for complement-fixing antibody to *Rickettsia mooseri* antigen. Queensland tick typhus could not be excluded because of the unavailability of *R. australis* antigen.

Mycoplasma Pneumoniae

One hundred and twenty-five infections caused by *M. pneumoniae* were identified. Diagnosis was based on a fourfold rise in titre or a titre of 1:128 or greater in a single serum specimen, together with a consistent clinical history. One hundred and seventeen cases occurred in Queensland, six in New South Wales and two in the Northern Territory. Sixty of the infections were in children under the age of 15 years.

Arbovirus Serology

Eighty-four cases of epidemic polyarthritis were diagnosed this year. The diagnosis of 13 infections was based on a fourfold rise in titre in the haemagglutination-inhibition (HI) and/or the complement-fixation tests. The other 71 cases were identified by demonstrating the presence of Ross River-specific IgM antibody. The geographical distribution of the 84 cases is shown in Table LXXIX.

All cases of epidemic polyarthritis occurred between December, 1976, and March, 1977, a period similar to that of previous years. A survey to determine the persistence of IgM antibody is still in progress. In one patient with a history of spondylitis, IgM antibody to Ross River virus has persisted for three years. This particular case is from the Northern Rivers district of New South Wales. Another patient mentioned in last year's annual report still had Ross River-specific IgM antibody in his serum 35 months after onset. Unfortunately, he has since been lost to follow-up.

Two patients with Ross River-specific IgM antibody also had Sindbis-specific antibody in the IgM fractions. One patient, a 40-year-old female from Rockhampton, had lesions on her fingers as well as polyarthritis. The other case from Toowoomba had painful swollen joints and a slight rash. There were no other symptoms to suggest the presence of Sindbis infection.

One case of Australian arboencephalitis (Murray Valley encephalitis) occurred in Queensland during the year. A 16-year-old male, a resident of Kowanyama, collapsed in the shower. When found by his parents, he was having a grand mal seizure. Since he had clinical manifestations of encephalitis, he was hospitalized in Cairns. Paired sera showed diagnostic rises in antibody to Australian arboencephalitis virus in both the HI and CF tests. Specific antibody to the virus was also present in the IgM fraction of the second serum specimen but specific antibodies to Kunjin and Alfuy viruses (two other Flaviviruses) were not detected in the same fraction. Although Australian arboencephalitis virus is enzootic in the area of Kowanyama, this patient is thought to be the first clinical case of Australian arboencephalitis to be recognised in the region.

Using Australian arboencephalitis antigen to detect antibodies to other closely related Flaviviruses, diagnostic rises in the HI test were found in 21 persons, who had probably been infected with one of the four dengue viruses. Twenty cases, which occurred in Papua New Guinea, had clinical findings suggestive of dengue fever. No information is available on the remaining patient.

Four cases of dengue fever were diagnosed by detecting antibodies to one or more of the four types of dengue virus in the IgM fraction. Three patients had antibody which reacted to all four antigens; antibody in the other cases reacted only with dengue type 4 antigen.

Arbovirus antigens used in the laboratory are kindly supplied by Dr R. L. Doherty of the Queensland Institute of Medical Research.

TABLE LXXIX
THE GEOGRAPHICAL DISTRIBUTION OF 84 CASES OF
EPIDEMIC POLYARTHRITIS
(1st July, 1976 to 30th June, 1977)

District	Number
<i>Queensland—</i>	
Metropolitan	13
Moreton	3
Maryborough	3
Rockhampton	13
Mackay	2
Townsville	24
Cairns	8
Darling Downs	5
South Western	3
Central Western	2
Far Western	2
North Western	3
Total	81
<i>Northern Territory—</i>	
Darwin	2
<i>New Guinea—</i>	
Boroko	1
GRAND TOTAL	84

Amoebiasis

Five cases of amoebiasis were diagnosed serologically during the year. Each had a relevant history including liver involvement. The patients included one missionary and a visiting U.S. marine. One person had been in Columbia and another in Papua New Guinea. The fifth case also had a past history of amoebiasis with liver abscess.

Cryptococcosis

Two residents of Cairns, with pulmonary lesions, were shown to have cryptococcal antigen in their sera. Four similar cases had circulating antibody; three were from Brisbane and one from Cairns. Cryptococcal antigen was present in the cerebrospinal fluid of three patients with meningitis, two from Brisbane and one from Papua New Guinea. One of the cases of meningitis also had high serum antigen and antibody levels.

Syphilis Serology

A number of difficulties have been experienced in setting up the autoanalyser for the automatic reagin test (ART). When perfected this test will replace V.D.R.L. screen for syphilis.

VIROLOGY

Virus Isolations

The Virology Laboratory received 7 207 specimens for virus isolation and viruses were isolated from 1 445 specimens from 1 365 patients (Table LXXX). The various clinical syndromes with which the viruses were associated are shown in Table LXXX.

The large (56 per cent) increase in viral isolates was due to the influenza epidemic which had commenced when the last report was written. In an eleven week period from July to September, influenza A/Victoria/3/75 was isolated from 350 patients. Five of the positive specimens were collected at post mortem. The virus had a widespread distribution throughout Queensland, and caused a five to seven day illness. It was isolated from 92 staff members of the Royal Brisbane Hospital and from two of the staff in the Virology Laboratory. In a Brisbane suburban practice influenza A/Victoria/3/75 was isolated from seven of the ten patients

with respiratory infection who attended on one particular day. Four of the seven patients yielding the virus had received one dose of vaccine two to three months before onset of illness. Influenza virus has not been isolated from any patient in Queensland since September, 1976.

Parainfluenza viruses were isolated throughout the year, but the types varied from month to month. Type 3 virus was prevalent from July, 1976, to February, 1977, type 2 during March and April and type 1 during May and June, 1977. Parainfluenza viruses were isolated from the tissues of three cases collected at post mortem (two S.I.D.S. and one adult).

Rhinovirus infection was demonstrated consistently throughout the year, particularly in the winter months, but an unusually high peak occurred in December when the virus was isolated from 16 patients, many of whom had been diagnosed as having summer influenza.

Parainfluenza viruses and rhinoviruses are frequently isolated from patients with clinical manifestations of influenza.

Respiratory syncytial virus was isolated mainly in the winter months from 21 patients, many of whom were infants with bronchiolitis. During the year a rapid fluorescent antibody test was developed for this virus. Results of this test are available in four to six hours, compared with seven to ten days for virus isolation. Unfortunately the rapid test can only be performed on nasopharyngeal secretions containing ciliated epithelial cells, but not on nose and throat swabs.

Adenovirus infection occurred throughout the year and many of the isolates were from patients with respiratory infection. In the autumn of 1977, the eye clinics at three of the major Brisbane hospitals reported an increase in the number of patients with keratoconjunctivitis. Adenoviruses were isolated from 22 of these patients.

Cytomegalovirus is a ubiquitous virus and although it was isolated from 51 patients with respiratory infection, many of these isolations must be regarded as fortuitous and of little significance. Cytomegalovirus is however significant when isolated from neonates, provided that specimens are collected within the first seven days of life; six such patients were encountered this year.

Herpes simplex virus is another common virus. It was isolated from 330 patients with a range of symptoms. Encephalitis is perhaps the most serious complication of herpes simplex. The virus was isolated from the brain of one adult and from the tissues of two neonates who succumbed to the infection. One newborn with a generalised herpes simplex infection survived. The neonates probably acquired the infection from the maternal genital tract. Genital lesions are the most common form of herpes infection referred to the laboratory for verification. During the year the virus was isolated from genital lesions on 83 females and 51 males. This virus has the unfortunate property of producing recurring lesions at regular intervals, particularly in times of stress, and consequently some of the 64 patients with respiratory infection from whom the virus was isolated must be regarded as recurring infections. Primary infection with herpes simplex virus is usually the most severe, and in many patients, particularly infants, it presents as a stomatitis. Sixty cases of herpes stomatitis were encountered during the year. The virus was also isolated from 57 patients with external lesions, other than genital lesions, and from eleven with dendritic ulcers.

Other viruses isolated from patients with vesicular rashes include varicella-zoster virus from six patients, vaccinia virus from one patient and coxsackievirus A16, the agent of human hand-foot and mouth disease, from two patients.

In the summer months many specimens were received from patients with aseptic meningitis. The principal virus causing this condition was coxsackievirus B5, which was isolated from 65 patients (31 cerebrospinal fluids were positive). Other viruses commonly isolated were coxsackievirus A9 (several of these patients also had a non-vesicular rash), echovirus types 9, 15, 19 and mumps virus.

The virus most frequently isolated from neonates was coxsackievirus B5 (many had aseptic meningitis), but herpes simplex virus and echovirus were also encountered. Babies who failed to thrive also yielded a variety of viruses.

Once again babies who died with S.I.D.S. were actively investigated. Viruses were isolated from the specimens of eleven of these, but no particular one predominated.

A number of viruses was isolated from patients with gastrointestinal disorders. It is now known that the main agent of gastroenteritis in infants is rotavirus. This agent

cannot be isolated using normal techniques, but can readily be demonstrated in faecal specimens using the electron microscope. Specimens of this nature are now being examined by this laboratory using the electron microscope at the Queensland Institute of Technology. Rotavirus particles have been demonstrated in three patients.

Echovirus 1 was again isolated from a patient with peritonitis in pregnancy (see 1972 Report). This virus was also isolated from four babies with myocarditis, and three patients with aseptic meningitis.

Only one case of paralytic poliomyelitis was verified by virus isolation this year; the infection occurred in Papua New Guinea. All other poliovirus isolates were regarded as probably vaccine strains and therefore fortuitous. Serum samples of 119 randomly selected patients were tested for the presence of neutralizing antibodies to the three types of poliovirus using micro-titre plates. Fifty-two individuals had antibodies to each of the three types of virus, and five had no demonstrable antibody. The remainder had antibodies to at least one and often two types of poliovirus. No information was available on the vaccination status of the patients.

Hepatitis B Virus

The number of patients with Hepatitis B antigen (HBsAg) in their serum rose to 173 this year (Table LXXXII). The Virology Laboratory continued to monitor the renal unit at the Princess Alexandra Hospital, where three renal patients, including a long term carrier, and two possible donors were found to be antigenaemic. One hundred and sixty patients with suspected hepatitis were found to have hepatitis B antigen in their serum. Twenty-three of these were known to be associated with drug abuse, four gave a history of transfusions, two had been recently tattooed and another had recently had her ears pierced. The staff serums tested included staff of the renal unit, staff of the laboratory and staff of other allied institutions. Eight in this category were found to be positive, principally nurses.

Three small surveys were also undertaken during the year, and the results are included in Table LXXXVII. Thus it was found that six of 54 patients at the Challinor Centre, two of 37 patients at the Wondai geriatric unit and three of 119 inhabitants of the Lockhart River Mission were found to be positive to the Hepatitis B antigen test.

Of the total 215 sera positive, 60 were found to be so by the very sensitive radio-immune assay technique alone.

A small proportion of the samples referred were tested for the presence of Hepatitis B antibody (anti-HB_s) by radio-immune assay. The presence of antibody indicates past but not presently active infection. Table LXXXIII shows that 32 sera from 29 patients out of the 154 sera tested were positive, the highest incidence being at the Challinor Centre where fourteen patients were positive. This high incidence at the Challinor Centre (six others were antigenaemic) is not surprising as it is well documented that mental institutions are situations in which the risk of transmission of this virus is high.

TABLE LXXX
VIRUS ISOLATIONS FROM CLINICAL CASES

Virus	Number of Patients with Virus Isolates	Number of Viruses Isolated
Influenza virus	350	352
Parainfluenza virus	83	87
Mumps virus	19	19
Respiratory syncytial virus	21	21
Rubella virus	14	14
Coxsackievirus A	52	58
Coxsackievirus B	99	119
Echovirus	81	89
Poliovirus	16	18
Untyped enterovirus	6	6
Rhinovirus	99	100
Adenovirus	123	138
Herpes simplex virus	330	345
Varicella-zoster virus	6	6
Cytomegalovirus	65	72
Vaccinia	1	1
TOTALS	1 365	1 445

Number of specimens tested: 7 207.

TABLE LXXXI
VIRUS ISOLATIONS FROM CLINICAL CASES
(1st July, 1976—30th June, 1977)

Diagnosis	Virus				Number of Cases	Positive Specimens
Aseptic meningitis, encephalitis, paralysis	Coxsackievirus B2	..	..	..	3	2 faeces 1 throat swab 1 cerebrospinal fluid
	Coxsackievirus B5	..	..	..	65	31 cerebrospinal fluids 26 throat swabs 12 faeces 5 urines
	Coxsackievirus A4	..	..	..	1	1 faeces
	Coxsackievirus A5	..	..	..	1	1 faeces
	Coxsackievirus A6	..	..	..	1	1 faeces
	Coxsackievirus A9	..	..	..	25	13 cerebrospinal fluids 9 throat swabs 6 faeces
	Mumps virus	..	..	..	13	8 cerebrospinal fluids 5 throat swabs
	Adenovirus 2	..	..	..	2	2 throat swabs 1 faeces
	Adenovirus 3	..	..	..	2	2 throat swabs
	Adenovirus untyped	..	..	..	6	4 throat swabs 2 faeces
	Echovirus 1	..	..	..	3	3 faeces 1 throat swab
	Echovirus 9	..	..	..	9	6 throat swabs 3 cerebrospinal fluids
	Echovirus 15	..	..	..	9	4 cerebrospinal fluids 4 faeces 1 throat swab
	Echovirus 17	..	..	..	5	3 throat swabs 2 faeces
	Echovirus 19	..	..	..	9	1 throat swab 5 cerebrospinal fluids 2 faeces
	Echovirus 21	..	..	..	4	2 throat swabs 2 cerebrospinal fluids 1 faeces
	Echovirus 22	..	..	..	1	1 throat swab 1 faeces
	Echovirus 25	..	..	..	1	1 throat swab
	Echovirus 31	..	..	..	1	2 faeces
	Enterovirus untyped	..	..	..	1	1 cerebrospinal fluid
	Poliovirus 2	..	..	..	1	1 faeces
	Herpes simplex virus	..	..	..	1	1 brain
Respiratory infection	Influenza A/Victoria/3/75	..	..	..	350	347 throat swabs 5 lungs
	Rhinovirus	..	..	..	99	100 throat swabs
	Parainfluenza virus 1	..	..	..	19	20 throat swabs
	Parainfluenza virus 2	..	..	..	38	37 throat swabs 2 lungs
	Parainfluenza virus 3	..	..	..	23	23 throat swabs
	Respiratory syncytial virus	..	..	..	21	21 throat swabs
	Herpes simplex virus	..	..	..	64	65 throat swabs
	Cytomegalovirus	..	..	..	51	45 throat swabs 8 urines 1 lung
	Adenovirus 1	..	..	..	3	3 throat swabs
	Adenovirus 2	..	..	..	1	1 throat swab
	Adenovirus 3	..	..	..	2	2 throat swabs 1 faeces 1 urine
	Adenovirus 5	..	..	..	2	2 throat swabs
	Adenovirus 7	..	..	..	2	2 throat swabs
	Adenovirus untyped	..	..	..	72	59 throat swabs 19 faeces 4 urines
	Echovirus 1	..	..	..	2	2 throat swabs
	Echovirus 6	..	..	..	2	2 throat swabs
	Echovirus 7	..	..	..	3	3 throat swabs
	Echovirus 9	..	..	..	1	1 throat swab
	Echovirus 17	..	..	..	3	2 throat swabs 1 urine
	Echovirus 19	..	..	..	5	5 throat swabs
	Echovirus 22	..	..	..	2	2 urines 1 faeces
	Echovirus 25	..	..	..	1	1 faeces
	Poliovirus 1	..	..	..	4	4 throat swabs
	Poliovirus 2	..	..	..	1	1 faeces
	Poliovirus 3	..	..	..	3	3 faeces
	Coxsackievirus A2	..	..	..	2	2 throat swabs
	Coxsackievirus A6	..	..	..	6	5 throat swabs 1 faeces
	Coxsackievirus A9	..	..	..	4	3 throat swabs 1 faeces
	Coxsackievirus A10	..	..	..	1	1 faeces
	Coxsackievirus B1	..	..	..	1	1 throat swab
	Coxsackievirus B2	..	..	..	2	1 throat swab 1 faeces 1 urine
	Coxsackievirus B3	..	..	..	1	1 throat swab 1 faeces
	Coxsackievirus B5	..	..	..	12	9 throat swabs 3 faeces
	Enterovirus untyped	..	..	..	2	1 throat swab 1 urine
	Mumps virus	..	..	..	1	1 throat swab

TABLE LXXXI—*continued*
 VIRUS ISOLATIONS FROM CLINICAL CASES—*continued*
 (1st July, 1976—30th June, 1977)—*continued*

Diagnosis	Virus	Number of Cases	Positive Specimens
Erythematous rash	Rubella virus	9	8 throat swabs 1 foetal tissue 1 throat swab
	Cytomegalovirus	1	1 throat swab
	Echovirus 1	1	1 faeces
	Echovirus 21	1	1 faeces
	Coxsackievirus A9	5	5 throat swabs
Vesicular rash	Herpes simplex virus	57	58 vesicle swabs
	Varicella-zoster virus	6	6 vesicle swabs
	Vaccinia virus	1	1 vesicle swab
	Coxsackievirus A16	2	2 vesicle swabs 1 urine 1 faeces
	Enterovirus untyped	1	1 throat swab
Genital ulceration	Herpes simplex virus	134	85 vulval swabs 53 penile swabs
Vaginitis	Cytomegalovirus	1	1 vulval swab
Gingivo-stomatitis	Herpes simplex virus	60	62 mouth swabs
	Coxsackievirus A4	1	1 mouth swab
Conjunctivitis	Adenovirus 3	2	2 eye swabs
	Adenovirus 7	5	3 eye swabs 2 throat swabs 1 faeces
	Adenovirus untyped	15	13 eye swabs 2 throat swabs 1 faeces
	Herpes simplex virus	11	11 eye swabs
	Cytomegalovirus	6	6 throat swabs 1 kidney 1 tissue
Intrauterine infection	Rubella virus	4	3 throat swabs 1 eye swab
	Herpes simplex virus	3	2 throat swabs 1 urine 2 vesicle swabs 5 tissues
	Coxsackievirus B5	11	7 throat swabs 3 cerebrospinal fluids 6 faeces 3 urines
Neonatal infection	Coxsackievirus B6	1	1 faeces
	Echovirus 1	2	2 faeces
	Echovirus 15	1	1 urine
	Echovirus 19	1	1 cerebrospinal fluid
	Echovirus 31	1	1 faeces
	Cytomegalovirus	3	2 throat swabs 1 urine
	Adenovirus untyped	4	2 throat swabs 2 faeces
Failure-to-thrive	Poliovirus 3	2	1 throat swab 1 faeces
	Coxsackievirus B5	1	1 faeces
	Echovirus 2	1	1 faeces
	Parainfluenza virus 3	1	1 throat swab
	Parainfluenza virus 3	2	2 lungs 1 trachea 1 gland
	Poliovirus 1	2	2 colons
	Poliovirus 3	2	2 faeces
S.I.D.S.	Coxsackievirus A9	1	1 colon
	Echovirus 22	1	1 tissue
	Enterovirus untyped	1	1 tissue
	Poliovirus 1	2	1 throat swab 2 faeces
	Coxsackievirus A9	1	1 faeces
	Coxsackievirus B2	1	1 throat swab
	Coxsackievirus B5	1	1 faeces
	Echovirus 1	1	2 faeces
	Echovirus 11	1	1 faeces
	Echovirus 25	2	1 throat swab 2 faeces
	Enterovirus untyped	1	1 faeces
	Adenovirus untyped	5	2 throat swabs 3 faeces
Gastro-intestinal disorder	Cytomegalovirus	2	2 throat swabs 2 urines
	Echovirus 1	4	1 throat swab 2 urines 2 faeces
	Echovirus 22	1	1 faeces
	Mumps virus	5	4 throat swabs 1 faeces
	Coxsackievirus A6	1	1 throat swab
	Echovirus 1	1	2 faeces
	Echovirus 1	1	1 throat swab
Myocarditis	Echovirus 1	4	1 throat swab 2 urines 2 faeces
Lymphadenopathy	Echovirus 22	1	1 faeces
	Mumps virus	5	4 throat swabs 1 faeces
Abdominal pain	Coxsackievirus A6	1	1 throat swab
Peritonitis in pregnancy	Echovirus 1	1	2 faeces
Arthritis	Echovirus 1	1	1 throat swab

TABLE LXXXII
HEPATITIS B ANTIGEN SEROLOGY

Source	Number of Sera Tested	Number of Sera with Hepatitis B Antigen	Number of Sera Positive by Radio-immune Assay Alone	Number of Patients with Hepatitis B Antigen
Renal Patients ..	2 174	12	6	3
Renal Donors ..	40	2	2	2
Patients	2 154	190	45	160
Staff	280	11	7	8
TOTALS ..	4 648	215	60	173

TABLE LXXXIII
HEPATITIS B ANTIBODY SEROLOGY

Source	Number of Sera Tested	Number of Sera with Hepatitis B Antibody	Number of Patients with Hepatitis B Antibody
Challinor Centre ..	42	17	14
Wondai Geriatric Unit	30	8	8
Renal Patients ..	43	4	4
Patients	23	2	2
Staff	16	1	1
TOTALS	154	32	29

BACTERIOLOGY

Cholera

On 17th February, 1977, a 56-year-old female was diagnosed by Dr A. Rao, Princess Alexandra Hospital, as suffering from cholera on the basis of positive blood culture. The patient had been suffering from a severe gastro-intestinal illness for about one week and was admitted to hospital on 14th February in Hypovolaemic shock.

The patient had a history of pernicious anaemia and achlorhydria rheumatoid arthritis and a psychiatric disorder. She had been resident in Australia for 13 years but had previously travelled through the Middle East, West Africa and Indonesia. For two months before admission she had lived with a friend in a caravan park at Beenleigh, 35 km south of Brisbane.

Blood culture was performed 5 times in the first 24 hours following admission and *Vibrio cholerae* was isolated on 3 occasions. The organism was also recovered on rectal swab. Her companion was investigated and *V. cholerae* was isolated on faecal culture but he suffered only mild diarrhoea. The patient recovered with appropriate treatment and both she and her companion were discharged after numerous negative faecal cultures.

Epidemiological investigation showed that the organism was distributed throughout the water supply of the caravan park and the town of Beenleigh. This was traced back to a supplementary water supply to the town from an intake point at the Luscombe Weir on the Albert River, 12 km from the town. The organism was also recovered upstream for a distance of 25 km from the weir.

The identity of the organism was confirmed by the Australian Cholera Reference Centre at the School of Public Health and Tropical Medicine, Sydney, N.S.W., and cultures from the two patients and from representative water samples were sent to Dr Pal at the W.H.O. Cholera Reference Centre in Calcutta where all strains were typed as *Vibrio cholerae* piotype eltor serotype Inaba, phage type 2. Strains were also sent to Dr R. Bradley Sack, John Hopkins University, Baltimore, U.S.A. and were found to be toxigenic by rabbit ileal loop and by adrenal cell culture though the degree of toxigenicity varied.

In spite of wide publicity and intensive investigation no further cases of cholera occurred and the organism was not recovered from any of the persons investigated in the caravan park, residents along the course of the Albert River nor in the Canungra Army Camp. At the present time the source of the contamination remains unknown.

Monitoring of the Albert River and other rivers and streams over a wide area was carried out and still continues. Specimens from the Albert River were fairly regularly positive until 3rd May. The water temperature at the Luscombe

Weir fell from an average of 23°C in April to 14°C early in June. One further sample collected downstream from the weir on 22nd June also grew *V. cholerae*, the water temperature at this time being 17°C.

During the last week in March 1977, a water sample from the Logan River was found to be positive. The Logan and Albert Rivers are not widely separated and join downstream from Beenleigh. Both arise in rugged mountain country and flow through sparsely populated rural areas. Both rivers are tidal for some of their length but positive cultures have been obtained both from above and below the tidal areas. Specimens from the Logan River remained regularly positive until 4th May and one further positive sample was collected on 31st May, the water temperature at this time being 20°C. Strains recovered from the Logan River were found to be identical with those from the Albert River.

On 27th April and 4th May *V. cholerae* was isolated from the gut of specimens of the common sea mullet (*Mugil cephalus*) caught in the Logan River, one being captured 5 km upstream from the highest point where *V. cholerae* was grown from the water. Both the Albert and the Logan Rivers have been fished since but no further isolations have been made.

All other rivers tested have given consistently negative results.

Enteropathogens

Enteric pathogens isolated from clinical specimens are listed in Table LXXXIV. *Salmonella enteritidis* was recovered on one occasion from a throat swab and on 55 occasions from faecal specimens. These isolates were submitted to the Salmonella Reference Laboratory, Institute of Medical and Veterinary Science in South Australia, for serotyping. *Shigella* spp. was obtained from 64 samples of faeces, enteropathogenic *Escherichia coli* from 26 faecal specimens, enterotoxigenic *Staphylococcus aureus* from three faecal specimens and *Edwardsiella tarda* from one sample of faeces. *Vibrio cholerae* was isolated from the faeces of the companion of the index case of cholera in Queensland (see report on the cholera incident) This person only had a brief episode of mild diarrhoea.

A culture of *Salmonella typhi*, isolated from a Korean seaman with fever and severe diarrhoea was referred to this laboratory for conformation studies by a regional laboratory. The patient had been admitted to hospital after his ship had docked in a port in Queensland. Tests confirmed the species identification of the isolate. Investigations undertaken at the Microbiological Diagnostic Unit, University of Melbourne, showed that isolates recovered from both blood and faeces were *Salmonella typhi*, phage type M1.

TABLE LXXXIV
BACTERIAL ENTERIC PATHOGENS ISOLATED FROM ROUTINE CLINICAL SPECIMENS

Bacteria	Sample	Number of Isolations
<i>Salmonella</i> sp.	Faeces ..	55
	Throat Swab	1
<i>Shigella</i> sp.	Faeces ..	64
Enteropathogenic <i>E. coli</i>	Faeces ..	26
<i>V. cholerae</i>	Faeces ..	1
<i>Staphylococcus aureus</i>	Faeces ..	3
<i>Edwardsiella tarda</i>	Faeces ..	1

Neisseria Gonorrhoeae

Following the isolation of pencillinace-producing strains in Australia, 114 laboratory isolates of *N. gonorrhoeae* were investigated. None was found to produce penicillinase.

Diphtheria

All throat swabs received are routinely examined for *Corynebacterium diphtheriae*. No isolates were recovered during the year.

Melioidosis

Pseudomonas pseudomallei was isolated from a person who had undergone treatment for tuberculosis and a malignancy. This patient died within days of collection of the sputum specimen.

MYCOLOGY

Pathogenic and opportunistic fungi isolated or detected during the year are listed in Table LXXXV. *Candida albicans* was the most frequently recovered species, followed by dermatophytes. *Malassezia furfur* was identified solely by microscopic examination; this fungus will only grow on specially enriched media.

PARASITOLOGY

Parasites observed during the routine examination of clinical specimens are listed in Table LXXXVI. Apart from *Sarcoptes scabiei* seen in two skin scrapings and adult specimens of *Ascaris lumbricoides*, all were identified in faeces. Four imported cases of vivax malaria were diagnosed in the Haematology Laboratory. Two were contracted in Pakistan and two in Papua New Guinea.

TABLE LXXXV
PATHOGENIC AND OPPORTUNISTIC FUNGI ISOLATED OR DETECTED IN ROUTINE CLINICAL SPECIMENS

Fungi	Material	Number of Isolations
<i>Aspergillus</i> sp.	Sputum	3
	Ear swabs	7
<i>Candida albicans</i>	Cervical, vaginal, urethral swabs	285
	Skin scrapings	79
	Throat swabs, sputum	279
	Urines	23
	Miscellaneous (pus, ear swabs, &c.)	149
<i>Candida tropicalis</i>	Nail	1
<i>Epidermophyton floccosum</i>	Skin scrapings	33
<i>Malassezia furfur</i>	Skin scrapings	14
<i>Microsporum canis</i>	Skin scrapings	30
<i>Microsporum gypseum</i>	Skin scrapings	5
<i>Nocardia asteroides</i>	Pus (oral cavity)	1
<i>Trichophyton mentagrophytes</i>	Skin scrapings	31
<i>Trichophyton rubrum</i>	Skin scrapings	51
<i>Trichophyton tonsurans</i>	Skin scrapings	3

TABLE LXXXVI
PARASITES DETECTED IN ROUTINE CLINICAL SPECIMENS

Parasite	Material	Number
<i>Entamoeba histolytica</i> cysts	Faeces	11
<i>Entamoeba coli</i> cysts	Faeces	29
<i>Giardia lamblia</i> cysts	Faeces	72
<i>Chilomastix mesnili</i> cysts	Faeces	1
<i>Endolimax nana</i> cysts	Faeces	13
Hookworm ova	Faeces	4
<i>Ancylostoma duodenale</i> (adult)	Faeces	1
<i>Strongyloides stercoralis</i> larvae	Faeces	2
<i>Ascaris lumbricoides</i> (adult)	Faeces	2
<i>Ascaris lumbricoides</i> ova	Faeces	6
<i>Trichuris trichiura</i> ova	Faeces	22
<i>Hymenolepis nana</i> ova	Faeces	6
<i>Enterobius vermicularis</i> ova	Faeces	2
<i>Sarcoptes scabiei</i>	Skin Scrapings	2

MYCOBACTERIOLOGY

Routine Diagnostic Tests

The laboratory received 22 809 specimens for mycobacteriological studies. This figure represents an increase of 9 per cent on last year's total. A survey conducted in the Torres Strait area partly accounted for the increase. Also, specimens are now being submitted from the Greenslopes Repatriation Hospital and the Australian Health Laboratory in Darwin. In addition to clinical specimens, 220 mycobacterial isolates from other laboratories were submitted for identification or sensitivity-testing or both. This figure is 74 less than last year's, mainly because of a decrease in the number of cultures received from New Guinea.

Mycobacterium tuberculosis was isolated from specimens from 105 persons, 95 of whom had no previous record of tuberculosis. All isolates, with the exception of eight, were from pulmonary sites. Three were recovered from urine, two from cerebrospinal fluid, two from lymph nodes in the neck region and one from post mortem pericardial fluid.

Mycobacterim bovis was grown from specimens from six persons. One isolate was from the endometrium of a 29-year-old female; the others were from sputum specimens from males—three were employed at a meatworks, another had been a stockman and the other was a pensioner who had lived in Finland. *Mycobacterium bovis* strain B.C.G. was isolated from two patients with complications following B.C.G. vaccination.

A typical mycobacteria isolated from 181 patients were identified (Table LXXXVII). This figure includes 42 cultures

received from other laboratories. Of the isolates made in this laboratory, 96 were from patients with no previous mycobacteriological history. From bacteriological findings alone, it appears that the isolates from 36 newly diagnosed patients were probably disease associated. Both *M. tuberculosis* and *M. avium*—*M. scrofulaceum*—*M. intracellulare* (M.A.I.S.) complex were found in several sputum specimens from one patient. Although most isolates were obtained from pulmonary material there has been an increase in the number of extra-pulmonary isolates of atypical mycobacteria. Tissues from five female children with cervical lymphadenitis yielded M.A.I.S. organisms of the following serotypes: Lunning, Gause, Cox, Dent and autoagglutinable. *Mycobacterium fortuitum* was isolated from an inguinal lymph node of a girl with a chronic discharging sinus on the foot, and from two adult females with chronic ulcers arising after a foot injury. *Mycobacterium chelonae* was isolated from two adult females with abscesses on limbs. *Mycobacterium marinum* was grown from material from two males and one female, all of whom had developed superficial lesions following injury to limbs. Sputa from two males with pulmonary disease were consistently positive for *M. kansasii*. Although sputum isolates of *M. nonchromogenicum* are usually of no clinical significance, this species has been repeatedly isolated from one patient over the past seven years.

Sensitivity Testing

Two hundred and eighty-five isolates of *M. tuberculosis* and eighty-seven isolates of other mycobacteria were tested for sensitivity to anti-tuberculosis compounds. The usual range of five compounds is extended to nine for atypical mycobacteria and those strains of *M. tuberculosis* recovered from patients showing a poor response to therapy. The incidence of resistance in *M. tuberculosis* strains from previously untreated patients is shown in Table XIII. This year there is an apparent increase in the primary resistance to ethambutol due to the lowering of the in-vitro criterion for resistance—the resistance ratio, which was formerly 8, has been reduced to 4 because of the narrow margin between therapeutic and toxic levels of ethambutol.

Special Studies and Projects

Mrs Blacklock, Senior Scientist, Tuberculosis Laboratory, attended the International Conference on Mycobacteria and Mycobacterial Diseases, which was held in Cape Town, South Africa between 21st and 24th June, 1976. Papers covering taxonomy, bacteriology, immunology, epidemiology, diagnosis and chemotherapy were presented. During the meeting it was stressed that, in taxonomic studies, a wide variety of mycobacterial strains from different environments should be studied. As a result of this emphasis, the Tuberculosis Laboratory has since despatched to the following authorities both clinically significant and insignificant isolates of various species, reference strains and antisera to the serotypes of the M.A.I.S. complex:

- (a) Dr L. Eidus, Director, Bureau of Microbiology, Ottawa, Ontario, Canada;
- (b) Dr H. Kleeberg, Director, Tuberculosis Research Institute, Pretoria, Transvaal, South Africa.

The laboratory also despatched the following:

- (a) Cultures of rapidly-growing mycobacterial species, *Nocardia* species and Rhodochrous Taxon to Mrs M. Ridel, University of Goteberg, Sweden;
- (b) Cultures, together with antisera, of eight previously unrecognised serotypes of the M.A.I.S. complex (isolated in this laboratory) to Professor G. Meissner, Forschungsinstitut, Borstel, West Germany.

The laboratory, together with 15 others throughout the world, is currently participating in a trial on sensitivity testing of *M. tuberculosis* strains. This investigation was organized by the Committee on Bacteriology and Immunology of the International Union Against Tuberculosis, and is being co-ordinated by Dr H. Kleeberg of Pretoria, South Africa. The aim is to find a simple, dependable and reproducible method for sensitivity testing which can be used in laboratories staffed by personnel with limited experience. To date, 36 coded cultures sent by the co-ordinator and 10 cultures isolated in this laboratory have been examined to determine their sensitivities to streptomycin, P.A.S., I.N.A.H., rifampicin, ethambutol, ethionamide and thiacetazone. The results of the trial will be presented by Dr Kleeberg at the next Committee meeting to be held in Istanbul in October, 1977.

Mycobacterium simiae is a newly defined species which resembles certain members of the M.A.I.S. complex. A study was undertaken to find out whether any of the 20 laboratory isolates with properties like those of *M. simiae* did in fact belong to that species. Isolates were re-examined for urease activity, niacin and catalase production, and photochromogenicity. They were also screened with *M. simiae* antisera. However, as previously determined, all belonged to the M.A.I.S. complex.

Since sodium pyruvate is reputed to stimulate the primary growth of some mycobacteria, particularly *M. bovis* and drug-resistant strains of *M. tuberculosis*, an investigation was conducted to assess this property. The results not only confirmed this report but also showed that the M.A.I.S. complex also prefer the pyruvate-containing media. Specimens are now cultured routinely on two tubes of plain Lowenstein-Jensen (L-J) medium and two tubes of glycerol-free L-J containing 0.5 per cent of sodium pyruvate.

As mentioned in last year's Report, a surprisingly high proportion of the laboratory's M.A.I.S. isolates are agglutinated by *M. avium* 1 antiserum. Six strains were forwarded to Dr J. Marks of the Tuberculosis Reference Laboratory, Cardiff, for liquid analysis. Dr Marks has subsequently reported that all strains had lipid patterns characteristic for *M. avium* serotype 1, although some differed from typical *M. avium* in drug sensitivity. Further, none of the strains grew above 42°C. Dr Marks suggests that these strains are free-living variants of *M. avium*.

Also included in last year's report was a study of M.A.I.S. strains whose pigmentation, urease activity and serotype placed them in a taxonomic position intermediate to *M. intracellulare* and *M. scrofulaceum*. Eleven strains have been forwarded to Cardiff for lipid analysis, and agglutinating antisera are being prepared against each of three nonpigmented, urease-negative strains belonging to serotypes Scrofulaceum, Lunning and Gause, respectively. Correlation of biochemical properties, serological specificity and lipid type should be instructive.

There have been no published studies of extra-pulmonary atypical mycobacterial disease in this State. Abscesses, ulcers, etc., probably have only a low morbidity, but it seems likely that many cases go undetected because medical personnel are unfamiliar with the diverse pathogenic abilities of atypical mycobacteria. With a view to preparing a report for publication, results over the past six years have been reviewed, and clinical data collected on non-pulmonary specimens with positive bacteriology. We have noticed a recent increase in frequency of positive cultures from lymph nodes, pus, etc. Some of the isolations would not have been made had the primary cultures not been incubated at both 32°C and 37°C, and it seems that the use of pyruvate-containing media has also been partly responsible for the increased yield of primary isolates.

Reference Laboratory

(1) Reference strains and antisera for serotypes of *M. simiae* have been obtained from Professor G. Meissner, Borsstel, West Germany.

(2) Reference strains and antisera for serotypes of *M. marinum*, the organism responsible for swimming-pool granuloma, have been requested from National Jewish Hospital, Denver.

(3) Several isolates made in veterinary pathology laboratories have been referred for identification. Among them were *M. fortuitum* from granulomatous lesions of a cat, *M. intracellulare* serotype Davis from a tuberculous goanna, an auto-agglutinable M.A.I.S. strain from a dog, and *M. terrae* from a goat with John's disease. Sixteen isolates from the lymph nodes of cattle tested in a tuberculin survey in Northern Territory were forwarded from Adelaide. A large proportion of the strains were *M. intracellulare* serotype IIIb.

(4) The Department of Veterinary Pathology at Sydney University is making renewed efforts to cultivate an acid-fast organism commonly associated with ulcerating granulomatous lesions in domestic cats. The condition has been reported from many parts of the world, and most workers have concluded that the causative agent is *Mycobacterium lepraemurium*, an extremely fastidious organism which causes rat leprosy. Advice on suitable isolation media and procedures has been given, and it is hoped that collaboration will continue.

(5) The medical microbiologist at a large southern hospital sought advice as to the possible reason for an increase in false-positive smear results from his laboratory.

Serotyping

During the year, 191 isolates from clinical material submitted from 116 patients were serotyped. A number of patients are represented by more than one isolate. Eight patients were found to be excreting organisms of two different serotypes; three excreted organisms of three different serotypes throughout the year.

The frequency of the various serotypes among the isolates is shown in Table LXXXIX. Comparison with last year's results indicates little significant change in the distribution pattern. Serotypes Boone and Altmann, both common pathogens in this area, are again prominent. Serotype 1 seems to be occurring more often, although infrequently associated with disease. Non-typable strains were relatively less frequent this year.

TABLE LXXXVII
ATYPICAL MYCOBACTERIA
(181 Patients)

Species or Species Complex	Number of Patients
* <i>M. avium</i> - <i>M. intracellulare</i> - <i>M. scrofulaceum</i> complex	144
* <i>M. fortuitum</i>	10
* <i>M. chelonae</i>	6
* <i>M. kansasii</i>	4
* <i>M. marinum</i>	3
† <i>M. nonchromogenicum</i> - <i>M. terrae</i> complex	4
† <i>M. gordonae</i>	6
† <i>M. flavescens</i>	4
†Unclassified Group IV (Rapid Grower)	2
TOTAL	183‡

* Opportunistic pathogens.
† Saprophytes—Rarely disease-associated.
‡ Material from two persons yielded two different strains.

TABLE LXXXVIII
PRIMARY DRUG RESISTANCE OF *M. tuberculosis*
FROM QUEENSLAND PATIENTS (113 STRAINS)

Drug/s	Number of Strains	Per cent
Streptomycin only	2	1.8
P.A.S. only	1	0.9
I.N.A.H. only	3	2.7
Ethambutol only	4	3.5
Streptomycin and P.A.S.	1	0.9
Streptomycin and Ethambutol	1	0.9
P.A.S. and I.N.A.H.	1	0.9
P.A.S. and Ethambutol	1	0.9

TABLE LXXXIX
SEROTYPES IDENTIFIED AMONG M.A.I.S. STRAINS

Serotype	1975-76 (139 persons)	1976-77 (116 persons)
1	7	13
2	1	0
3	0	0
IIIa	1	0
IIIb	1	0
IV	0	0
V	0	0
VI	0	0
VII	8	7
Altmann	14	11
Arnold	2	1
Boone	16	18
Chance	4	5
Darden	2	6
Davis	4	1
Dent	6	4
Howell	2	3
Watson	6	8
Wilson	4	3
Yandle	6	6
Scrofulaceum	1	3
Lunning	7	10
Gause	3	1
21	0	1
22	1	2
23	1	1
24	0	0
25	0	2
26	1	2
27	0	1
28	0	1
Corey	3	0
Hammelswang	1	1
Ranchod	0	0
Wendt	0	1
Non-typable	29	12
Auto-agglutinable	12	14

W.H.O./F.A.O. LEPTOSPIROSIS REFERENCE
LABORATORY

Introduction

Serological evidence of recent leptospiral infection was found in 142 patients. This figure represents a decrease of 67 compared with that of last year. Seventy-three cases occurred in Queensland, 18 in New South Wales, one in Victoria, one in the Northern Territory and 49 from Fiji. The geographical distribution of serotypes is set out in Table XC and occupations of cases in Table XCI.

Cultures from the reference collection were sent on request to New South Wales, Victoria and India, as well as to institutions in Queensland. Rabbit antisera to reference strains were despatched to New South Wales, Victoria, Western Australia, India and New Zealand. Instruction in diagnostic techniques was given to visiting laboratory workers and technical information supplied to institutions in South Australia and New South Wales.

Sixty-one of the 69 Isolates received or isolated in the laboratory prior to July 1976 have now been serotyped. Eight are still being investigated. Twenty-two isolates from North Queensland were identified as follows: serovars *celledoni* (7), *australis* (4), *robinsoni* (3), *kremastos* (1), *zanoni* (4), *szwajizak* (1) and *pomona* (2). The serovars of eight isolates from South Queensland were *hardjo* (4) and *pomona* (4). of the six isolates from New South Wales and Victoria, five belonged to serovar *pomona* and one to serovar *hardjo*. Ten of the thirty isolates referred by the Pasteur Institute, Bandung, Indonesia, were identified as follows: serovars *javanica* (3), *bataviae* (6) and *australis* (1). Twelve isolates from human sources belonged to the biflexa complex (saprophytes) and consequently were not serovared because only known pathogenic strains are kept in the reference collection. The remainder have yet to be serovared. Three isolates received from Monash University were identified as follows: serovars *canicola* (1), *ballum* (1) and *copenhageni* (1).

During the year a further 14 isolates were received from the following sources: School of Veterinary Science, Melbourne (1), Department of Health, Wellington, New Zealand (3), the Commonwealth Health Laboratory, Cairns (7), and the District Veterinary Laboratory, Wollongbar, New South Wales (3). Four of the isolates have so far been serovared.

Sera from 28 pigs and seven dogs were referred to the laboratory by the Department of Agriculture, Gilbert and Ellice Islands, for leptospiral antibody screening. No antibodies were detected.

Ten bovine sera submitted by the Institute of Medical Veterinary Science, Adelaide, were negative in tests for antibodies to serovar *copenhageni*.

Five bovine sera, received from the School of Veterinary Science, Melbourne, were tested for antibodies to servovar *hardio*. No antibody was detected in three; one specimen had a titre of 1:50 and the other a titre of 1:100.

Four hundred and ninety-eight sera from meatworkers in the Newcastle district of New South Wales were submitted for base-line determination of antibodies to leptospires. Only twenty-two had a titre of at least 1:50.

Fiji Survey

By arrangement with the Ministry of Health, Fiji, agglutination tests for leptospiral antibodies are continuing to be undertaken on sera submitted by the consultant pathologist in Suva. Of 200 specimens received, 110 had an antibody titre of at least 1:50. Serological evidence of recent infection was found in 49 persons. The serogroups of the causative serovars are contained in Table XC.

Comparison of the Complement-Fixation Test with the Microscopic Agglutination Test for the Detection of Leptospirosis

A study, initiated in 1975 to compare the sensitivities and specificities of the complement-fixation and microscopic agglutination tests, is still in progress. Initially, it was thought that difficulties in obtaining follow-up serum specimens from patients, from whom leptospires had been isolated, would be minimal. Unfortunately this has not been the case. However, a report based on the findings should be available for publication during the forthcoming financial year.

TABLE XC
GEOGRAPHICAL DISTRIBUTION AND SEROGROUP OF
INFECTING LEPTOSPIRES IN 142 INFECTIONS
(1st July 1976—30th June, 1977)

Serogroup	Number
<i>Coastal Area of Queensland, North of Rockhampton—</i>	
Icterohaemorrhagiae	1
Celledoni	2
Canicola	1
Pyrogenes	4
Australis	1
Pomona	4
Hebdomadis	8
Tarassovi	4
Total	25
<i>Coastal Area of Queensland, Rockhampton to New South Wales Border—</i>	
Pomona	15
Hebdomadis	18
Total	33
<i>Darling Downs and Western Queensland—</i>	
Pomona	10
Hebdomadis	5
Total	15
<i>New South Wales—</i>	
Pomona	10
Hebdomadis	8
Total	18
<i>Victoria—</i>	
Tarassovi	1
<i>Northern Territory—</i>	
Hebdomadis	1
<i>Fiji—</i>	
Icterohaemorrhagiae	11
Canicola	9
Cynopteri	12
Australis	14
Pomona	3
Total	49
GRAND TOTAL	142

TABLE XCI
OCCUPATIONAL DISTRIBUTION OF LEPTOSPIRAL
CASES
(1st July, 1976—30th June, 1977)

Occupation	Number
Meat Industry	34
Dairy Industry	36
Sugar Industry	3
Other	3
Unstated	66
TOTAL	142

EPIDEMIOLOGICAL INVESTIGATIONS

Ciguatera Intoxication

After consuming part of a baked 1.5 kg coral trout (*Plectropoma maculatum*) obtained from a commercial source in Gladstone, a husband and wife developed manifestations of ciguatera food poisoning within approximately four hours. Their infant daughter started to vomit 18 hours after ingesting a small quantity of the fish. The other children, a five-year-old son who refused to eat the flesh "because it was bad", and a seven-year-old son who only consumed a very small portion, remained symptomless. Both adults developed nausea,

vomiting, diarrhoea, pains in the chest and painful parathesias, the last of which persisted for three and five weeks. The family cat developed the staggers, showed signs of respiratory distress and refused to take food for a few days after eating a portion of the coral trout. This episode is of interest in that a fish of low weight contained sufficient heat-stable ichthyotoxin to cause characteristic intoxication.

TABLE XCII
TWENTY-FIVE SAMPLES OF IMPORTED FROZEN PRE-COOKED PRAWNS WHICH FAILED TO MEET AT LEAST ONE OF THE PRESCRIBED FOOD STANDARDS

Prescribed Standard of the Food and Drug Regulations of Queensland	Number of Samples that Failed
Total count at 37°C for 48 hours shall not exceed 500 000 per gram	18
Number of <i>Staphylococcus aureus</i> shall not exceed 100 per gram	19
No <i>Salmonella</i> sp. shall be present	8*

*The number of isolates of the one bioserotype and five serotypes of *Salmonella enteritidis* (recovered from unit samples) are as follows:—
bioser Java (3) ser Give (1)
ser Houten (2) ser Lexington (2)
ser Welterreden (3) ser Bareilly (2)
All were serotyped by the Salmonella Reference Laboratory, Institute of Medical and Veterinary Science, South Australia.

Bacteriological Screening of Imported Frozen Pre-cooked Prawns

During the year the laboratory, in collaboration with the Section of Food Supervision, Division of Health Supervision, initiated a bacteriological survey of imported frozen prawns,

which had been pre-cooked and peeled. Consignments were each sampled by taking five sample units. Each unit was then examined individually to determine the total plate count of micro-organisms per gram after a 48-hour incubation period at 37°C, the number of *Staphylococcus aureus* per gram and the presence of enteropathogens. Thirty-four samples were examined and 25 failed to meet the standards set down in the Food and Drug Regulations of Queensland. Table XCII gives the number of unsatisfactory samples against each prescribed regulation and lists the serotypes of *Salmonella enteritidis* recovered from sample units. Measures taken to protect the public in Queensland are described in that part of this year's Annual Report prepared by the Section of Food Supervision. Unless each sample consists of at least five sample units, many unsatisfactory consignments will escape detection in the laboratory.

Outbreaks of Gastro-Intestinal Illness

Six outbreaks of gastro-intestinal illness were investigated by officers of this laboratory and the Division of Health Supervision. They are summarised in Table XCIII. *Clostridium perfringens* was responsible for one outbreak, and was probably responsible for two incidents in one hospital which occurred two days apart. Since the curried prawns and rice contained over a million *Bacillus cereus* per gram, that micro-organism probably caused the episode in a family of three. Staphylococcal food poisoning in 30 persons who had consumed milk shakes prepared with unpasteurised milk, was confirmed by isolating *Staphylococcus aureus* phage type 47/53/83A from one of two faecal specimens submitted and also from two samples of the unpasteurised milk. All isolates were subsequently shown to produce staphylococcal enterotoxins A and D in the Bacteriology Section of the School of Public Health and Tropical Medicine in Sydney. Although no casual agent could be identified in specimens of faeces and vomitus, the outbreak in a fitness camp was probably due to a 27-nm parvovirus-like agent because the clinical manifestations closely resembled those of "winter vomiting disease". Similar outbreaks had occurred in different groups of visitors at the camp one and two weeks prior to the investigation. Following a three-week absence of visitors no further incidents were reported to the Health Department.

TABLE XCIII
SIX OUTBREAKS OF GASTRO-INTESTINAL ILLNESS INVESTIGATED IN QUEENSLAND

Persons		Major Manifestations	Place	Vehicle	Cause	Reason(s) for Outbreak
At Risk	Sick					
30 approx. (adults)	8	Diarrhoea, abdominal cramps (incubation period 12–18 hours)	Licensed premises	Mushroom gravy	<i>Clostridium perfringens</i> Hobbs' Type 5*	Inadequate holding temperature, plus topping up with previous day's residue
?	30 approx.	Vomiting, diarrhoea (incubation "short")	Cafe	Unpasteurised milk	Enterotoxins A and D produced by <i>Staph. aureus</i> †	Use of contaminated unpasteurised milk
3 (family)	3	Diarrhoea, abdominal cramps (incubation period 14 hours approximately)	Cafe	Curried prawns and rice	Probably <i>Bacillus cereus</i>	Inadequate holding temperatures
180 (children aged 10–12 years)	55	Vomiting, headache, weakness (incubation period 24–48 hours)	Fitness camp	None identified	? 27 nm parvo-virus-like agent causing "winter vomiting disease"	Not known
45 (adults)	16	Diarrhoea, abdominal cramps (incubation period 9–12 hours)	Hospital	Probably chicken	Probably <i>Clostridium perfringens</i>	Prolonged cooling at room temperature and inadequate reheating
91 (adults)	53	Diarrhoea, abdominal cramps	At above institution	Probably gravy containing chicken stock prepared from above	Probably <i>Clostridium perfringens</i>	Probably inadequate holding temperature following contamination with chicken stock

* Hobbs' typed at the School of Public Health and Tropical Medicine, Sydney.
† Enterotoxin production and identification were undertaken at the School of Public Health and Tropical Medicine, Sydney.

Institution for the Mentally Handicapped

Another institution for the mentally handicapped was inspected this year by officers of the Division of Health Supervision and this laboratory, following an outbreak of diarrhoea in three wards. A suggestion had also been made that the facilities were overcrowded. The population at the

time of inspection consisted of bed-fast microcephalics and hydrocephalics, chair-fast sub-normals and mobile children mostly with Down's syndrome. The visit revealed that—
(1) as far as diarrhoeal disease was concerned, only an endemic situation existed;

- (2) overcrowding was not a problem because the space area per cot met the requirements for nursing homes which was thought to be satisfactory for sub-normal children clinically free from communicable disease;
- (3) high standards of hygiene were being practised by the staff, and
- (4) the use of "Garbags" for the temporary storage and transportation of both "foul" and "septic" linen and clothes was unsatisfactory. Plastic bags have since replaced "Garbags".

A survey for enteropathogens was subsequently conducted and the findings are given in Table XCIV. The pathology department of the adjoining hospital subsequently verified that infections with *Shigella flexneri* persisted in suspected carriers for at least a six-week period. To prevent dissemination of

enteric infection it was recommended that the transfer of children between wards be strictly limited, that children with diarrhoea be isolated and given non-specific treatment to stem the diarrhoea and that specific treatment for parasites be withheld—unless the clinical state of the child warranted it—to avoid the possibility of selecting out strains resistant to therapeutic agents.

Vietnamese Refugees

In September, 1976, 13 adults and nine children arrived in Brisbane. Full blood counts, a C.D.R.L. screen, and a parasitic survey were undertaken. No blood parasites were observed and no cases of syphilis detected. Five children and four adults were mildly anaemic. The results of a faecal survey are given in Table XCIV.

TABLE XCIV
TYPES OF ENTEROPATHOGENS DETECTED IN SUB-NORMAL CHILDREN AND VIETNAMESE REFUGEES

Types of Enteropathogens Detected	Sub-normal Children				Vietnamese Refugees		
	Bed-fast	Chair-fast	Active	Total	Male	Female	Total
<i>Escherichia coli</i> 0125/B15 only	1	3	4	..	..	..
<i>Escherichia coli</i> 0126/B16 only	1	1	..	..	..
<i>Shigella flexneri</i> 6 only	5	5	..	..	..
<i>Salmonella enteritidis</i> ser Thompson only	1	1
<i>Entamoeba histolytica</i> cysts only	1	3	4	..	..	..
<i>Giardia lamblia</i> cysts only	3	2	2	7	1	..	1
<i>Trichuris trichiura</i> ova only	9	9	..	..	..
<i>Enterobius vermicularis</i> ova only	1	..	1	..	..	..
<i>Ascaris lumbricoides</i> ova only	3	1	4
<i>Escherichia coli</i> 0126/B16 and <i>Giardia lamblia</i> cysts	..	1	1	2	..	..	..
<i>Shigella flexneri</i> 6 and <i>Giardia lamblia</i> cysts	1	1	..	..	..
<i>Giardia lamblia</i> cysts and <i>Trichuris trichiura</i> ova	1	1	..	..	..
<i>Shigella flexneri</i> 6 and <i>Giardia lamblia</i> cysts and <i>Trichuris trichiura</i> ova	1	1	..	..	..
TOTAL PERSONS INFECTED	3	6	27	36	4	2	6
TOTAL PERSONS EXAMINED	32	36	50	118	11	9	20
TOTAL PERSONS NOT EXAMINED	2	..	2

N.H.M.R.C. Food Survey

In conjunction with four interstate laboratories this laboratory participated in a survey to determine the microbiological status of certain foods which could be a health hazard but on which little information was available in Australia. The foods selected included rotisserie and deep-fried chickens, stews, imitation cream, cold custard mixes, prepared fish dishes, salads, meat pies, spring rolls, hamburgers, infant foods, corned beef, ham and Devon-type sausage. The purpose of the survey was to determine the need for microbiological standards for the foods tested. Where indicated the results obtained would be used to set such standards. On the recommendation of the Central Statistical Unit of the Commonwealth Department of Health the collaborating organisations conducted a two week pilot investigation in the first half of 1974 to assess the questionnaire and the processing system. The survey itself commenced in September, 1974, and terminated in February, 1977. A report covering the period between September, 1974, and August, 1976, has since been prepared by the National Health and Medical Research Council.

HAEMATOLOGY

A further increase has occurred in investigations such as bone marrows, vitamin B₁₂ and folate assays and tests for auto-immune antibodies. On the other hand, the fall in routine tests following the introduction of Medibank has now levelled out.

A scintillation counter, which is also being used by other sections, has recently been installed. As a result, assays for vitamin B₁₂ and folate are now being carried out entirely within the laboratory so that results are available much sooner than previously. As the scintillation counter has just been

received it has not been possible to develop methods for the quantitation of anti-nuclear antibodies this year, but these will be introduced shortly.

The investigation of hereditary haemolytic anaemias continues to be worthwhile. This year 28 cases of β -thalassaemia trait, 1 of α -thalassaemia, 1 of $\delta\beta$ -thalassaemia, 2 of haemoglobin D and 2 of erythrocyte glucose-6-phosphate dehydrogenase deficiency were diagnosed.

The platelet aggregometer continues to show its worth in the investigation of bleeding disorders. A new research project has recently been commenced in conjunction with the Queensland Institute of Technology in which various properties of functional and non-functional platelets will be compared. An assessment was made of the effects of the age of a blood specimen on platelet function. This showed that blood samples for such studies must be received at the laboratory within 3 hours of collection. Thus, special transport arrangements must be made when these tests are required by centres outside the Brisbane area.

Examination of post mortem blood and bone marrow was carried out on two cases who suffered from suspected haematological abnormalities. In both cases the findings were non-contributory due to autolysis.

The section has continued to assist in the quality control programme for country laboratories. Tests added to this programme during the year include a rheumatoid factor test, Rhesus antibody detection and the examination of blood films for malarial parasites.

Assistance has also been given in the bleeding of Vietnamese refugees and in obtaining blood samples from approximately 300 meat workers for a serological survey of zoonoses. The results of these surveys will be reported elsewhere.

BIOCHEMISTRY

The reduction in the number of tests performed evident in the last annual report has not continued and in the present year there has been an increase in most categories. Estimations of cholesterol and triglycerides show the greatest increase, partly due to the continuing programme of the National Heart Foundation. Introduction of enzymatic methods for these tests has improved accuracy and precision though the equipment presently available is not ideally suited for these techniques.

The co-operation of the Royal Brisbane Hospital pathology department has enabled one of our staff to gain experience in tests for T₃ uptake and T₄ radioimmunoassay. These tests, now routine procedures for thyroid function investigation, will now be done at this laboratory using the recently installed scintillation counter. Sera giving abnormal results will be sent to the Royal Brisbane Hospital for further investigation.

Developmental work has been undertaken on an enzyme immunoassay technique (E.M.I.T.) for blood levels of some groups of drugs. With the acquisition of suitable equipment these techniques can be introduced and provide essential information for dosage regulation in patients receiving these drugs.

During the year a family was investigated because of scoline apnoea in one member. Cholinesterase levels and diducaine numbers indicated the presence of a silent gene causing abnormally low cholinesterase levels.

CYTOGENETICS

There has been an increase of 105 per cent in the number of tests performed by the section in the past year. A total of 320 cases have been investigated of which 240 were blood specimens, 72 amniotic fluids, 7 bone marrows and 1 foetal tissue (Table XCVI). A total of 28 chromosomal abnormalities were diagnosed during the year (Table XCV).

The main source of amniotic fluid specimens continues to be obstetricians in private practice throughout the State. Successful analysis of the specimens has been possible in 98.6 per cent of cases and the average time taken to obtain a result has been 14 days. A high success rate and a rapid report play an important role in diminishing anxiety in the patient and possible physical trauma due to repeated puncture of the uterus to obtain specimens. The results in this laboratory are comparable with world standards.

Two abnormalities were diagnosed prenatally. A 40-year-old woman had amniotic fluid taken at 16 weeks gestation. Analysis indicated Down's Syndrome (47XX+21) and this was confirmed following termination of the pregnancy three weeks after collection of the specimen. In the second case a 39-year-old woman from Northern N.S.W. had a similar specimen taken, also at 16 weeks gestation. The analysis showed Klinefelter's Syndrome (47XXY) and the pregnancy was terminated in Sydney three weeks after uterine puncture. Foetal tissue received from Sydney confirmed the diagnosis.

Blood and bone marrow specimens continue to be received from country hospitals, Government institutions and private obstetricians in conjunction with amniotic fluid analysis. The transport of specimens has become highly organised through the co-operation of doctors and laboratory workers in country centres and problems are few.

Difficulties were experienced in analysing bone marrows from outside the metropolitan area but a successful method for dealing with such specimens has been devised. A paper describing the technique is in preparation.

An investigation is being undertaken to ascertain the chromosomal status of couples with infertility or habitual miscarriages. Studies elsewhere have suggested that variations in the heterochromatic region of certain chromosomes are common in habitually aborting couples. It has been suggested that such chromosomes, usually regarded as normal variants, may be associated with faulty cell division. Such variations have also been noted in this laboratory, but the number of specimens examined at this stage is insufficient for any conclusions to be drawn.

The technique of C-banding has been introduced this year. This is a time-consuming but specific method for demonstrating the centromeric region of each chromosome. It is being performed as a routine on all patients and three chromosome rearrangements which would have otherwise been missed have been detected using this technique.

Following a recommendation by the Human Genetics Society of Queensland, it has been decided not to institute methods for the estimation of α foetoprotein in amniotic fluid, and all such specimens are referred to the Royal Brisbane Hospital.

The technique of culturing skin for chromosome analysis is now available at this laboratory and specimens are being accepted.

In the coming year it is hoped to introduce fluorescent and reverse banding techniques which were deferred due to lack of time.

A survey will also be undertaken of chromosome abnormalities in mentally defective patients in residential care.

TABLE XCV

Abnormalities Diagnosed					Number
Blood—					
Down's Syndrome .. .. .	..	..	..	..	5
Klinefelter's Syndrome .. .. .	..	..	..	..	7
Turner's Syndrome .. .. .	..	..	..	..	2
Cri du chat Syndrome .. .. .	..	..	..	..	2
Edward's Syndrome .. .. .	..	..	..	..	1
Testicular feminisation .. .. .	..	..	..	..	1
Other chromosome deletions or translocations ..					7
Bone Marrow—					
Philadelphia chromosome .. .. .	..	..	..	..	1
Amniotic Fluid—					
Down's Syndrome .. .. .	..	..	..	..	1
Klinefelter's Syndrome .. .. .	..	..	..	..	1
Total 1976-77 .. .. .	..	..	..	..	28
Total 1975-76 .. .. .	..	..	..	..	15

TABLE XCVI
CYTOGENETICS

Specimen		Examination		Totals
Blood .. ..	..	Chromosome Analysis ..	..	240
Marrow .. ..	..	Chromosome Analysis ..	..	7
Tissues .. ..	..	Chromosome Analysis ..	..	1
Amniotic Fluid ..	..	Chromosome Analysis ..	..	72
Total 1976-77				320
Total 1975-76				156

FORENSIC BIOLOGY

During the year 477 submissions were received, The items submitted included articles of clothing, bedding, weapons, scrapings, swabs, smears and hairs. These were examined for the detection of bloodstains, seminal fluid, saliva, faecal matter, species identification and grouping of bloodstains, and hair comparisons. Forensic Biologists visited the scenes of crime on 12 occasions, a significant decrease from the previous year. This is due mainly to the fact that biologists now visit scenes of crime only after the Director of the Laboratory has been consulted. More time is thus available to biologists to concentrate on laboratory work rather than scenes of crime which, in the majority of cases, should be within the capabilities of police scene of crime examiners.

Biologists were required to give evidence at court on 158 occasions during the year. Defence lawyers have become more aware of the nature of the work carried out by biologists and have, on occasions, requested additional tests be performed to assist the defence case.

An additional Forensic Biologist is now available for court appearances making a total of 3 Scientists to cover the biological court work for the whole of Queensland.

INSTITUTE OF FORENSIC PATHOLOGY

During the year 1 225 coronial autopsies were performed, 81 fewer than the previous year.

At the request of the Police Department, staff pathologists made 18 visits to country areas to perform autopsies on 21 cases of homicide or suspected homicide. In other cases it has been possible to give advice and guidance by telephone to enable a satisfactory investigation to be made.

The Department of Transport requested attendance at three fatal aircraft crashes in the country involving 9 fatalities. In addition, 3 victims of fatal aircraft accidents including one hang glider were examined at the Institute of Forensic Pathology. One country accident involved a pilot and three passengers. The aircraft had an engine failure whilst on a joy flight and crashed into a lake in 4 feet of water 100 yards from the shore. One passenger

survived. One passenger sustained a compound fracture of one tibia and fibula and some cerebral contusion. The pilot and the third passenger suffered only minor injuries. Death in the three fatalities was due to drowning. Blood alcohol concentrations in the pilot and the two passengers were 261, 236 and 135 mg per 100 ml respectively.

The autopsy records of the Institute maintained continuously since 1935 and now comprising over 28 000 fully documented post mortem reports together with paraffin blocks and histology slides, continue to be a source of research material. Each year students undertake projects based on material available within the files. During the last year Professor F. A. Whitlock has investigated the association of suicide and neoplasms. In this study 273 suicides in persons over the age of 50 years were compared with a control series matched for age and sex who died as a result of accident. It was found that 17 suicidal deaths were associated with malignant tumours and 4 with benign intracranial tumours. In the control group there were 3 tumours, 2 malignant and 1 benign.

The survey of traffic accidents undertaken in conjunction with the Government Chemical Laboratory to investigate the presence of drugs in fatal accidents is continuing. The intention is to examine a series of 200 consecutive cases over the age of 14 years who die within 12 hours of the accident. This series is now almost complete and the results will be available shortly.

The report on Forensic Medicine in Australia prepared by the Director and Dr I. S. Wilkey for the Council of the Royal College of Pathologists has resulted in a decision that all candidates for the General examination and for the Special examination in Anatomical Pathology are required to have practical experience in forensic pathology. Arrangements have been made whereby pathology registrars from metropolitan hospitals have been able to spend time in the Institute of Forensic Pathology. So far five registrars have taken advantage of this opportunity.

Cerebellar Calcification

An unusual form of calcification in the cerebellum has been observed in routine autopsies in Queensland over the past 30 years. Cases of gross cerebellar calcification, obvious macroscopically and in some cases radiologically have been encountered and examined in detail. Four surveys have been carried out at intervals between 1951 and 1976, three at the Institute of Forensic Pathology and one at Princess Alexandra Hospital.

Calcification of varying degree was found in 13 of 82 (15.8 per cent) consecutive autopsies in the 1951 survey, in 18 of 170 (10.5 per cent) in 1956, in 158 of 1 130 (14 per cent) in the 1964-66 hospital series and in 11 of 100 (11 per cent) in 1976.

In addition, during the last 33 years, 54 cases of gross calcification of the cerebellar folia have been encountered in the course of approximately 25 000 autopsies, an incidence of 1 in 460.

The mean ages for the four surveys are 58, 56, 64 and 68 respectively. No significant difference in the mean age of the cases in the 4 surveys was present. There was, however, a statistically significant difference in the younger end of the age range, in that the occurrence of cerebellar calcification is becoming more a lesion of the aged.

Lead determination in samples of cranial bone were made in 294 consecutive cases from the hospital autopsy series and 96 from the 1976 survey. A definite statistical correlation between cerebellar calcification and raised lead levels in bone was demonstrated by the significant interaction effect. This was apparent for both males and females.

Lead poisoning was formerly of epidemic proportions in Queensland and the cerebellar lesion, whilst probably not totally specific, may serve as an indicator of previous lead poisoning.

A full report of the pathology and epidemiology of this lesion has been prepared for publication.

Heroin Addiction

Four deaths associated with heroin addiction have occurred during the year. Three were males aged 21, 26 and 28 years and there was one female aged 25 years. Two of these resulted directly from the effect of a high concentration of heroin. In the other two cases death was delayed and resulted from inhalation of vomitus in one and bronchopneumonia in the other. The presence of small pulmonary granulomata commonly found in the U.S.A. and resulting from injection of talc and other impurities with the heroin, have not been a feature of the Brisbane cases. Histological examination of the cubital veins has shown the presence of a perivenous granulomatous and foreign body reaction with starch granules or talc crystals. In one case where addiction was denied by the family, the presence of such a reaction provided evidence of previous "main-lining".

Cocaine Poisoning

A male aged 25 drank some alcohol and swallowed an unknown number of 50 mg pethidine tablets. Later he gave himself an intravenous injection of cocaine and shortly afterwards collapsed. The ambulance was called and found him without pulse or respiration. He was in cardiac arrest on arrival at hospital and failed to respond. Levels of cocaine in the blood and liver were 4.4 µg per ml and 2.2 µg per g respectively. Pethidine levels were blood 0.9 µg per ml and liver 3.4 µg per g. The blood alcohol concentration was 37 mg per 100 ml. This is the first case of cocaine poisoning which has been encountered in Queensland within the last 10 years or more.

Fatal Shigellosis

A boy aged 9 years died suddenly and unexpectedly 24 hours after the onset of what appeared to be a mild gastrointestinal upset. Autopsy showed marked haemorrhage colitis involving the entire length of the colon and *Shigella flexneri* 2 was isolated. The father and a brother developed mild symptoms and *Shigella flexneri* was isolated from each. Both patients recovered uneventfully. The mother was not affected. It was thought that infection resulted from prawn used as bait on a fishing expedition by the father and the two boys.

An Unusual Suicide

A 57-year-old woman who had been depressed was found by her husband lying unconscious in a pool of blood on the concrete floor of the garage. A butchers knife which had been purchased the previous day was protruding from the occipital region of the scalp. She was admitted to hospital and X-rays showed the knife penetrating the occipital bone with the point lying at the level of the pituitary fossa. The knife was pulled out with great difficulty and the patient died without regaining consciousness some 2½ hours after being first discovered.

At autopsy the knife wound of the bone was horizontal and lay 2 cm above the posterior margin of the foramen magnum with the knife edge in the midline. The thickness of bone penetrated varied from 5 mm to 9 mm. The wound passed through the left cerebellar hemisphere into the inferior surface of the left temporal lobe and passed forward to the middle of the basal ganglia. The left lateral ventricle was filled with blood. The knife had penetrated a total distance of 12 cm from the skin.

Four superficial cuts on the hypothenar eminence of the right hand were consistent with the lady having grasped the base of the knife. Examination of the butt of the handle showed a small embedded gravel fragment and a series of indentations corresponding to the rough cement floor of the garage. No bruises, abrasions or any other injury could be found on the body. It was concluded that she had lain on the floor, held the point of the knife to the back of her head and driven it into her head by beating it on the floor.

Counselling Service for Parents of S.I.D.S. Cases

For some years a counselling service for parents who have lost a child from the sudden infant death syndrome has been operating in Brisbane. The procedure adopted is for the pathologist to inform a Social Worker attached to the Health Department as soon as practicable after the conclusion of the autopsy. The Social Worker visits the parents at the earliest opportunity, gives a brief explanation of the cause of death, and leaves a printed brochure on the subject of S.I.D.S. for the parents to read. Further follow-up visits are made as considered necessary and appropriate counselling is given.

This service has been found to be an effective way of dealing with the grief and bewilderment of parents who lose a child from this cause. Now that Social Workers are stationed in many of the larger country centres it has been decided to try and make this type of service available to parents in these areas. The Government Medical Officers responsible for performing Coroners autopsies have been supplied with the names of the Social Workers together with a selection of appropriate literature and encouraged to institute a similar programme in their area.

COUNTRY HOSPITAL LABORATORIES SECTION

In 1972, a Country Pathologist Advisory Committee was established on the recommendation of the Pathology Advisory Committee. Over the same period, the Laboratory of Microbiology and Pathology has played an increasing role in providing support and technical supervision for public hospital laboratories where there is no pathologist. In 1975, the Laboratory developed an external quality control programme in biochemistry and subsequently quality control programmes in bacteriology and haematology were commenced.

Considerable standardisation of the equipment and methods in use in these laboratories has been achieved, simplifying maintenance and repair of equipment by the Medical Electronics Group and permitting a comprehensive range of laboratory consumable items to be made available on contract.

In July, 1976, the first conference of country laboratory personnel was held; the second conference was held in June, 1977. Equipment workshops were organised and opportunity given for discussion of problems in the laboratories. Both conferences were considered to be very successful.

During 1977 Mr R. Smith was appointed to a newly created position of Co-ordinator of Country Laboratories. A position of relieving technologist has also been created. Visits by technical staff and pathologists of the Laboratory of Microbiology and Pathology to country hospital laboratories commenced in 1973 and have continued. The Co-ordinator and the Medical Electronics Group now make regular visits to country hospitals including on-site solution of problems with methods and equipment.

Laboratories are now functioning in 16 non-metropolitan hospitals; laboratories were opened and staffed at Warwick, Roma and Longreach during the year and the laboratory at Charleville Hospital should become functional in August, 1977. New laboratory buildings were opened in Mount Isa and Innisfail during the year and new laboratories are under construction at Atherton, Redcliffe and Southport Hospitals.

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TABLE XCVII
1. BACTERIOLOGY
A. SPECIMENS OF HUMAN ORIGIN (NON-TUBERCULOUS)

Specimen	Examination			Totals
	Culture	Microscopy	Antibiotic Sensitivity	
Swabs—				
Throat and Nose	981	62	401	1 444
Urethra, Cervix, Anus, Bartholin's Glands	4 804	6 145	624	11 573
Ear	412	13	206	631
Eye	66	1	34	101
Other	218	30	140	388
Pus	690	71	559	1 320
Miscellaneous	24	2	8	34
Cerebrospinal Fluid	51	51	11	113
Serous Exudate .. .. .	..	378	..	378
Sputum	949	763	585	2 297
Blood	322	..	31	353
Urine	8 167	8 167	1 899	18 233
Faeces	1 811	1 544	166	3 521
Culture Identification .. .. .	..	67	22	89
Miscellaneous	24	2	8	34
Total 1976-77	18 519	17 296	4 694	40 509
Total 1975-76	18 341	17 134	4 751	40 226

TUBERCULOSIS SECTION

Specimen	Examination			Total Tests
	Microscopy	Culture	Animal Inoculation	
Sputum	20 026	20 026	1	40 053
Sputum (Medihaler)	143	143	0	286
Urine	1 049	1 049	1	2 099
Serous Fluid	389	389	367	1 145
Tissue	330	330	330	990
Pus/Swab	195	195	189	579
Gastric Aspiration	167	167	1	335
CSF	113	113	113	339
Bone Marrow	134	132	132	398
Bronchial Wash	184	184	5	373
Bronchial Brush	26	26	26	78
Faeces	7	7	5	19
Laryngeal Swabs	43	43	0	86
Asbestos bodies	3	0	0	3
M. bovis (BCG) Culture	0	0	1	1
Total 1976-77	22 809	22 804	1 171	46 784
Total 1975-76	20 720	20 720	1 123	42 573

TABLE XCVII—continued
TUBERCULOSIS SECTION—continued

OTHER INVESTIGATIONS	1975-76	1976-77
CULTURES SUBMITTED—		
<i>Mycobacterium tuberculosis</i> for confirmation and sensitivity ..	248	173
Atypical mycobacteria for identification and sensitivity	38	34
Atypical mycobacteria for identification only	8	13
TOTAL	294	220
Atypical Mycobacteria Identified (Total)	177	206
Atypical Mycobacteria Serotyped ..	193	191
Serum tested for Mycobacterial Agglutinins	26	20
SENSITIVITIES PERFORMED—		
<i>Mycobacterium tuberculosis</i>	354	285
Others	75	87
TOTAL	429	372

MYCOLOGY

Specimen	Examination			Totals
	Culture	Microscopy	Antibiotic Sensitivity	
Scrapings (Skin and Nail)	1 126	1 077	102	2 305
Cervical and Vaginal	1 083			1 083
Sputum	299	299	3	601
Total, 1976-77	2 508	1 376	105	3 989
Total, 1975-76	2 105	1 092	102	3 299

B. FOODS AND WATERS

Specimen	Examination			Totals
	Culture	Plate Count	Reductase	
Water	8 010	8 010		16 020
Cholera Specimens	858			858
Milk	1 734	1 734	1 734	5 202
Cream	141	141	141	423
Other Milk Products	180	180		360
Meats and Fish	438	438		876
Miscellaneous	283	283		566
Total, 1976-77	11 644	10 786	1 875	24 305
Total, 1975-76	10 794	10 794	1 608	23 196

C. VARIOUS MATERIALS

Specimen	Examination				Totals
Disinfectants and Antiseptics	Rideal-Walker Co-efficient				13
Bottles	Sterility				38
Miscellaneous	Sterility				17
	Culture				17
	Total, 1976-77				85
	Total, 1975-76				163

TABLE XCVII—continued

2. PHAGE TYPING

	Totals
Cultures Prepared	2 246
Coagulase Tests	1 434
Cultures Phage Typed at R.T.D.	1 168
Cultures Phage Typed at 1 000 or 100 R.T.D.	410
Total, 1976-77	5 258
Total, 1975-76	4 581

3. SEROLOGY

Test	Totals
SERUM AGGLUTINATION TESTS—	
P.U.O. Tests (Routine)—	
<i>Salmonella typhi</i> (O)	510
<i>Salmonella typhi</i> (H)	16 281
<i>Salmonella enteritidis</i> bio ser Paratyphi A (H)	114
<i>Salmonella enteritidis</i> ser Paratyphi B (H)	114
<i>Proteus OXK</i>	16 338
<i>Proteus OX19</i>	16 256
<i>Proteus OX2</i>	69
<i>Brucella abortus</i>	16 642
<i>Listeria monocytogenes</i> 1 (O)	4
<i>Listeria monocytogenes</i> 1 (H)	4
<i>Listeria monocytogenes</i> 4 (O)	4
<i>Listeria monocytogenes</i> 4 (H)	4
<i>Cryptococcus neoformans</i> —Antigen test	383
<i>Cryptococcus neoformans</i> —Antibody test	383
Leptospira—	
<i>Serovar icterohaemorrhagiae</i>	18 822
<i>Serovar javanica</i>	18 822
<i>Serovar celledoni</i>	18 822
<i>Serovar canicola</i>	18 822
<i>Serovar ballum</i>	18 822
<i>Serovar zannoni</i>	18 822
<i>Serovar robinsoni</i>	18 822
<i>Serovar cynopteri</i>	18 822
<i>Serovar autumnalis</i>	18 822
<i>Serovar australis</i>	18 822
<i>Serovar pomona</i>	18 822
<i>Serovar grippityphosa</i>	18 822
<i>Serovar kremastos</i>	18 822
<i>Serovar szwajizak</i>	18 822
<i>Serovar hardjo</i>	18 822
<i>Serovar medanensis</i>	18 822
<i>Serovar bataviae</i>	18 822
<i>Serovar tarassovi</i>	18 822
<i>Serovar sejroe</i>	1
<i>Serovar patoc</i>	16
<i>Serovar illini</i>	16
<i>Serovar andamana</i>	16
Paul Bunnell Tests	17 033
Infectious Mononucleosis Slide Tests	494
P.U.O. Tests (Quantitative)	2 058
Syphilis—	
V.D.R.L. (Serum)	
Routine	17 870
Quantitative	1 633
V.D.R.L. (C.S.F.)	141
COMPLEMENT FIXATION TESTS—	
P.U.O. Tests—	
Q. fever— <i>Coxiella burneti</i> (Phase I)—	
Routine	137
Quantitative	41
Q. fever— <i>Coxiella burneti</i> (Phase II)—	
Routine	18 015
Quantitative	1 463
Typhus fever— <i>Rickettsia mooseri</i> (Soluble)—	
Routine	81
Typhus fever— <i>Rickettsia australis</i> —	
Routine	65
Chlamydial Infections— <i>Miyagawanella ovis</i> —	
Routine	16 382
Quantitative	1 181
Brucellosis— <i>Brucella abortus</i> —	
Routine	17 937
Quantitative	250
Primary Atypical Pneumonia— <i>Mycoplasma pneumoniae</i> —	
Routine	17 879
Quantitative	3 023
Leptospirosis— <i>Leptospira interrogans</i> serovar <i>patoc</i> <i>biflexa</i> complex—	
Routine	19 297
Quantitative	428

TABLE XCVII—continued

3. SEROLOGY—continued

Test	Totals
Viral Infections—	
Influenza A—	
Routine	10 464
Quantitative	3 569
Influenza B—	
Routine	10 464
Quantitative	1 244
Influenza C—	
Routine	8 569
Quantitative	388
Parainfluenza I—	
Routine	9 237
Quantitative	125
Parainfluenza II—	
Routine	1 734
Quantitative	76
Parainfluenza III—	
Routine	1 113
Quantitative	188
Adenovirus (group)—	
Routine	10 464
Quantitative	2 023
Respiratory syncytial virus—	
Routine	10 464
Quantitative	1 187
Mumps virus—	
Routine	9 919
Quantitative	2 595
Measles virus—	
Routine	2 855
Quantitative	1 540
Cytomegalovirus—	
Routine	4 700
Quantitative	1 184
Herpes simplex virus—	
Routine	3 000
Quantitative	1 649
Varicella zoster virus—	
Routine	744
Quantitative	232
Lymphocytic choriomeningitis virus—	
Routine	16 811
Quantitative	34
Rubella virus	432
Ross River virus	46
Sindbis virus	2
Toxoplasmosis— <i>Toxoplasma gondii</i> —	
Routine	5 048
Quantitative	130
Hydatid—	
Routine	133
HAEMAGGLUTINATION INHIBITION TESTS—	
Rubella antibodies	18 826
Rubella specific IgM antibodies	7 016
Arbovirus antibodies—	
Ross River virus—	
Routine	3 420
Quantitative	1 016
Australian arboencephalitis (Murray Valley encephalitis) virus—	
Routine	3 420
Quantitative	685
Sindbis virus—	
Routine	3 420
Quantitative	138
Alfuy virus	8
Kunjin virus	8
Ross River specific IgM antibodies	3 464
Australian arboencephalitis (Murray Valley encephalitis) specific IgM antibodies	504
Sindbis specific IgM antibodies	97
Alfuy specific IgM antibodies	80
Kunjin specific IgM antibodies	80
Dengue I specific IgM antibodies	72
Dengue II specific IgM antibodies	72
Dengue III specific IgM antibodies	72
Dengue IV specific IgM antibodies	72
HAEMAGGLUTINATION TESTS—	
T.P.H.A. (Syphilis)	725
Amoebiasis	147
Toxoplasmosis	424
Leptospirosis	16 321
Schistosomiasis	11
FLUORESCENT ANTIBODY TESTS—	
FTA-ABS Tests (Serum)	2 969
FTA-ABS Tests (C.S.F.)	33
FTA-ABS Specific IgM antibodies (Serum)	61
Toxoplasma Fluorescent Tests—	
Routine	3 412
Quantitative	906
OTHER TESTS—	
Fractionation of sera by sucrose density gradient ultracentrifugation	1 229

TABLE XCVII—continued
3. SEROLOGY—continued

Test	Totals
LEPTOSPIRAL STRAINS TYPED—(53)—	53
Agglutination Tests performed in typing	2 508
Absorption Tests performed in typing	263
Antisera prepared	62
LEPTOSPIRAL STRAINS IDENTIFIED AS BIFLEXA COMPLEX	12
Total 1976–77	735 327
Total 1975–76	666 468

4. BIOCHEMISTRY

Specimen	Examined for	Totals
Blood and or Serum	Acetyl cholinesterase	227
	Acid phosphatase	195
	Alanine aminotransferase	338
	Albumin	2 618
	Alkaline phosphatase	3 560
	Amylase	131
	Aspartate aminotransferase	3 651
	Bicarbonate	114
	Bilirubin	2 665
	Calcium	1 177
	Carotene	47
	Chloride	3 087
	Cholesterol	7 950
	Cholinesterase	237
	Copper	17
	“C” reactive protein	44
	Creatine kinase	402
	Creatinine	5 918
	Dibucane number	47
	Gamma glutamyl transferase	2 369
	Glucose	3 352
	Immunoglobulin	1 024
	Iron	1 058
	Lactate dehydrogenase	434
	Lipids	5 285
	Lipoprotein electrophoresis	1 670
	Lithium	310
	Magnesium	62
	Phosphorus inorganic	446
	Potassium	3 108
	Protein	2 679
	Protein electrophoresis (quantitative)	1 305
	Salicylate	39
	Sodium	3 106
	Transferrin	876
	Triglycerides	8 099
	Urea	6 958
	Urate	4 191
	Miscellaneous	16
		78 812
Urine	Amino acids	19
	Amylase	5
	Bence Jones protein	13
	Bilirubin	57
	Calcium	24
	Creatinine	40
	Delta aminolevulate	426
	5 hydroxy indole acetic acid	20
	3 methoxy 4 hydroxy mandelic acid	66
	Phosphorus inorganic	10
	Porphyrin screen	57
	Protein	61
	Protein electrophoresis	13
	Urate	8
	Urobilin	57
	Urobilinogen	57
	Miscellaneous	50
		983
Faeces	Fat content	252
	Occult blood	88
	Miscellaneous	5
		345
Spinal Fluid	Chloride	16
	Colloidal gold curve	172
	Globulin	8
	Glucose	14
	Protein	34
		244

TABLE XCVII—continued
4. BIOCHEMISTRY—continued

Specimen	Examined for	Totals
Functional Tests	Creatinine clearance	27
	Diagnex blue	8
	Glucose tolerance	257
	Xylose absorption	7
		299
Miscellaneous	Sweat chlorides	12
	Calculus	105
		117
	Total 1976–77	80 800
	Total 1975–76	88 643

5. HAEMATOLOGY

Test	Totals
Haematology profile with smears	12 435
Haematology profile without smears	2 133
Blood smears	84
Platelet count	348
Erythrocyte sedimentation rate	4 637
Eosinophil count	58
Reticulocyte count	290
Stipple cells	13
Haemoglobin electrophoresis only	17
Haemoglobin studies	244
Glucose-6-phosphate dehydrogenase	243
Pyruvate kinase	243
Glutathione reductase	243
Haemorrhagic studies	161
Prothrombin time	178
Red cell fragility	11
Vitamin B ₁₂	2 007
Folic acid	2 015
Rheumatoid arthritis screen	967
Rheumatoid arthritis test titre	193
Anti nuclear factor	932
Anti smooth muscle antibodies	228
Anti mitochondrial antibodies	228
Anti parietal cell antibodies	228
Pancreas antibodies	2
Anti heart antibodies	..
Anti pleural antibodies	..
Bone marrow	136
Neutrophil alkaline phosphatase	9
Periodic acid-Schiff	16
Peroxidase	21
Sudan black B	15
Iron stain	100
L.E. cells	7
Malarial parasites	158
Group and Rh	2 068
Rh antibody screen	2 176
Rhesus antibody titre	47
Immune anti-A/anti-B antibodies	2
Direct coombs	144
Indirect coombs test	21
Genotyping	21
Infectious mononucleosis test	1 062
Cold agglutinins	8
Cryoglobulins	2
Total 1976–77	34 151
Total 1975–76	36 827

TABLE XCVII—continued
6. PARASITOLOGY

Specimen	Object of Examination	Totals
Faeces	Amoebae (cysts and vegetative)	2 210
	Helminth ova	2 210
	Cholera	83
Pus	<i>Trichomanas vaginalis</i>	1 172
Blood	<i>Plasmodium</i> species	158
Helminth	Identification	3
Total 1976-77 ..		5 836
Total 1975-76 ..		13 933

7. VARIOUS TESTS

—	Totals
Guthrie Tests	34 851
Slide Test (Pregnancy)	531
Slide Test (Pregnancy) (Quantitative)	2
Seminal Fluid Assessment	25
Urine (Albumin)	8 167
Urine (Reducing Substances)	8 167
Total, 1976-77	51 743
Total, 1975-76	36 348

8. HISTOLOGY

Tissue Sections Prepared	Totals
Human—	
Biopsy (specimens received—12,738)	21 056
Medico-legal tissue	330
Animal Tissue	11
Total, 1976-77	21 397
Total, 1975-76	21 095

9. MEDICO-LEGAL

Exhibits	Totals
Clothing	1 226
Weapons	85
Blood	167
Scrapings	323
Vaginal Smears	234
Vaginal Swabs	60
Rectal Smears and Swabs	15
Hair	159
Skeletal Remains	14
Miscellaneous Items	366
Total, 1976-77	2 649
Total, 1975-76	1 887

Examinations on Exhibits	Totals
Screening Test for Blood	1 154
Blood Identification	1 094
Species Identification	1 146
Abo Groupings	1 117
MN Groupings	1 053
Rh Groupings	909
Blood Groups Miscellaneous	53
Haptoglobin	222
Acid Phosphatase Screening	575
Smears—Spermatozoa	578
Smears— <i>N. gonorrhoeae</i>	117
Rectal Smears and Swabs—Spermatozoa	15
Hair Comparison	116
Miscellaneous	317
Total, 1976-77	8 466
Total, 1975-76	6 043

TABLE XCVII—continued
10 POST MORTEMES

—	Total
Post-mortem Examinations .. Total, 1976-77	1 225
Total, 1975-76	1 306

11. INSTITUTE OF FORENSIC PATHOLOGY

Specimen	Examination	Totals
HISTOLOGY		
Tissue—human ..	Paraffin sections	7 295
	Frozen sections	1 049
	Histochemical tests	282
Tissue—animal ..	Frozen sections	1 015
	Total, 1976-77 ..	9 641
Total, 1975-76 ..		6 899

BACTERIOLOGY					
Swabs—					
Middle ear	..	Culture	..	..	20
Respiratory System		Culture	..	..	70
Pericardial	..	Culture	..	..	2
Wound	..	Culture	..	..	6
Peritoneal	..	Culture	..	..	6
Blood	..	Culture	..	..	33
C.S.F.	..	Culture	..	..	7
Faeces	..	Culture	..	..	16
Vaginal Smears	..	Microscopic for spermatozoa			2
Tissues	..	Microscopic for diatoms	..		6
Total, 1976-77					168
Total, 1975-76					242

12. MATERIAL SUPPLIED
TO HOSPITALS, PRIVATE PRACTITIONERS AND
LOCAL AUTHORITIES

—	Totals
Diagnostic Kits for Bacteriology and Virology ..	11 880
Diagnostic Kits for Haematology and Serology ..	4 824
Diagnostic Kits for Biochemistry	620
Assorted Sterile Containers	9 715
Bottles for Alcohol Estimation (Blood and Urine) ..	1 575
Total, 1976-77	28 614
Total, 1975-76	49 729

13. MEDIA

—	Totals
Slopes	161 246
Plates	143 921
Tubes and Bottles	324 365
Total, 1976-77	629 532
Total, 1975-76	588 030
Chemical Solutions	5 172 litres
Stains	290 litres
Total, 1976-77	5 462 litres
Total 1975-76	4 301 litres

TABLE XCVII—*continued*
14. ANIMAL BREEDING STATION

—					1976-77	1975-76
Animals Provided—						
Guinea-pigs	..	..	..	..	1 471	1 672
Rabbits	..	..	..	..	89	69
Mice—Litters	..	..	..	..	3 900	3 931
Weaned	..	..	..	..	1 929	1 640
Animal Bleeding—						
Rabbit (40 ml)	..	..	..	..	161	160
Guinea-pig (8 ml)	..	..	..	..	214	180
Sheep (400 ml)	..	..	..	..	112	71
Geese (10 ml)	..	..	..	..	55	55
Supplied to Other Institutions—						
Guinea-pigs	..	..	..	..	68	95
Mice	..	..	..	..	653	..
Stock on Hand (30th June 1977)—						
Guinea-pigs	..	..	..	..	440	490
Rabbits	..	..	..	..	160	159
Mice	..	..	..	..	1 100	1 300
Sheep	..	..	..	..	8	6
Geese	..	..	..	..	4	4

QUEENSLAND GOVERNMENT CHEMICAL LABORATORY

Director, Government Analyst and Chief Inspector of Explosives: D. MATHERS, M.Sc., A.R.A.C.I.

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The extent of the work performed for various Government Departments and Agencies is clearly demonstrated by a study of the detailed Sectional Reports which follows this summary.

The number of samples examined from all sources was 41 323 and Table XCVIII shows the derivation of those samples.

TABLE XCVIII
SHOWING SOURCES AND NUMBERS OF SAMPLES

Source	Number
State—	
Health (foodstuffs, waters, &c.)	9 438
Health (explosives)	695
Police, Coroner, Government Medical Officer, Institute of Forensic Pathology, Hospitals and Medical Practitioners ..	5 505
Industrial Medicine	1 247
Mines—	
Inspectorate and Chief Gas Examiner	875
Geological Survey Office	3 330
The Coal Board	629
Assay Laboratory, Cloncurry	1 534
Irrigation and Water Supply	3 830
Water Quality Council	3 662
State Stores Board	397
Works	1 209
Housing Commission	2 532
Other Departments	1 045
Commonwealth—	
Agriculture	2 865
Bureau of Customs	1 957
Public and Miscellaneous	546
Other Countries (P.N.G.)	27
	41 323

To be able to carry out this wide variety of analyses satisfactorily it is required that the staff be and remain well-informed in relation to the changing patterns within the discipline of analytical chemistry. However, a casual scanning of the sample types submitted would not give an adequate or correct picture. Chemists have to develop methods and carry out research so that they give the expert advice expected from them. The acquiring of modern apparatus is but the beginning, the place from which by long and patient endeavour he will be able to keep in step with modern technology whether it be related to a study of foods, of drugs, of poisons or of problems associated with the mining industry. This has been particularly evident throughout the year when the emphasis has been directed towards a deeper consciousness of the environment. The laboratory has had to develop new methods to study residues of pesticides and herbicides used within the community. This has not always been easy since the changes in formulations are frequent. Again, in relation to heavy metal residues, the desire to reduce or eliminate all of these has called for increasing sensitivity in the method of determination. Likewise changes in manufacturing processes and the associated interest in the atmosphere of the workplace have called for new methods to identify small but important concentrations of gases or vapours, and solids dispersed in the air. In relation to mining, the chemist has been called on to give advice on which it may be decided to close a mine because it is on fire. The emphasis here lies not only on accuracy but on the time in which the information can be given. Thus,

he has to develop his methods of analysis and his interpretation of the results to achieve a meaningful result in the shortest possible time.

Having all this in mind, the Laboratory has been able to acquire some high quality equipment. Included in the list are a number of gas chromatographs, two of which have automated sampling and readout, a gas chromatograph—mass spectrograph, a total carbon analyser for waste waters, additional modules to upgrade the Autoanalyser and the Computer. The use of the computer is particularly interesting since it has made possible the printing of the reports for the Water Section where the samples originate from the Irrigation and Water Supply Commission. It is hoped ultimately that it will be possible to present the data in such a way that it will be compatible with the computer system used by that Commission thus achieving a saving of time by the elimination of the intermediate reporting. Provision for this facility is being made in the forthcoming year.

Many of the processes of analysis lend themselves to computerisation. The laboratory intends to follow this approach progressively and for the present is looking at the determination of alcohol in blood and the determination of pesticide residue in foods, waters, and wastes.

Some degree of automation has already been achieved in respect of both of these determinations. Some attempt has been made to rationalise the services provided by the laboratory. In common with opinions expressed in similar laboratories, it is believed that the arrangement of work within the laboratory should be around the type of examination required rather than a segregation according to derivation of the samples. Apart from the analysis of samples which may lead to legal action this should be possible. From a cost benefit study it is inevitable and would in time considerably increase the efficiency of the laboratory and its ability to serve its client Departments. The ratio of professional to technical staff remains high and should be progressively varied so that there is a greater number of technical officers. When that has been achieved, the rationalisation of work as outlined before will be simpler.

Approximately two years ago, it was agreed that there should be a co-ordination of the staff of the Water Quality Council with that of this Laboratory particularly in regard to the analyses of Water and Wastes. One drawback to its taking place lay in the shortage of space. Moves currently taking shape may make the transfer possible within the next year.

Following a series of events in school laboratories, the Department of Education has instituted a policy of removing from such schools a large number of dangerous chemicals. During the year 19 consignments of unwanted chemicals were sent to this laboratory for destruction. The laboratory is happy to co-operate believing that destruction at a central depot has some guarantee of consistently safe disposal. Some chemicals, notably arsenic and mercury salts cannot be destroyed, so that safe storage is, at present, the only means of disposal.

One other Department which has used this laboratory for advice has been that of Mines. Staff have been on call on a number of occasions in relation to problems of ventilation and fires in Coal Mines and have undertaken training of teams from Mines Rescue Stations in some aspects of these matters. They have acted as examiners on the occasion of the Annual competition. These are useful exercises for staff since it offers the opportunity to tie the laboratory to the field work.

Some time ago, following discussions with the Renal Section of the Princess Alexandra Hospital, the laboratory undertook to examine waters submitted by persons using dialysis machines. This service has been maintained and is always treated as a matter of urgency. The waters may be derived from anywhere in Southern Queensland.

Changes were made in the Regulations under the *Explosives Act 1952-1975* which whilst referring to the necessity for persons using explosives to have a Shotfirer's Licence have also made it possible to have some control over the purchase of explosives. Some anomalies have become apparent which it is hoped will be rectified within the coming year. A desirable effect would have been to reduce the number of persons who are small users of explosives and, therefore, by lack of practice to be more likely to be inefficient. This has not, as yet, become apparent.

Studies are still being carried on relating to the security, transport and shortage of explosives. Some move towards finality should be undertaken shortly.

At the Conference of Chief Inspectors of Explosives of all States held four years ago it was agreed that all explosives should be reclassified in terms of the Intergovernmental Maritime Consultative Organisation code. This would have the effect of making the classification international and hence uniform for shipping and for land transport. Some change in the Regulations will be necessary.

During the year, Staff Members attended Conferences in other States, notably the Chief Inspectors of Explosives, the Scientific Officers engaged in Industrial Hygiene, and the related sub-committee of the National Health and Medical Research Council, the X-ray Spectroscopists and the Forensic and Toxicological Chemists and the Dangerous Drugs Conferences. Attendance at these Conferences provides an important opportunity for discussion with officers engaged on similar tasks in other States.

Projects in which the Laboratory has been particularly interested and for which it has conducted some in-depth research include—

- (i) a method for the identification of oil types as a means of identifying sources of pollution of streams with oil;
- (ii) a method for the determination of mercury residues in marine products;
- (iii) a continued study of a method for the determination of Iodine in Milk. This is shortly to be published as a paper;
- (iv) the acquisition of a gas chromatograph equipped with a flame photometric detector provided an effective technique for the determination of the Phenothiazine drugs in biological specimens;
- (v) extensions to the range of drug determinations in biological specimens has been made possible by the development in the laboratory of liquid chromatographic methods for the analysis of Sulthiame, Carbamazepine, Paracetamol and Quinidine;
- (vi) two surveys requiring the determination of lead in bone were undertaken. Before the analyses were commenced, dry ashing of the bone was investigated and adopted. Three methods for the measurement of the lead, colorimetric, atomic absorption and emission spectroscopy, were developed and compared before final selection was made, the final choice being atomic absorption.

SECTION 1

FOOD AND DRUGS

The main function of this section is to provide a service to the Health Department in relation to foods, drugs and poisons.

Examination of samples is directed towards establishing (a) conformity to compositional and labelling requirements of The Health Act and Regulations (b) fitness for human consumption, and (c) scheduling for the purposes of The Poisons Regulations. In addition surveys were carried out to determine trace elements as a guide to levels of contamination of food with these elements.

Samples were also received from the Department of Weights and Measures, the Local Government Department and the University of Queensland (Veterinary Science).

TABLE XCIX
SUMMARY OF SAMPLES EXAMINED
(Chiefly for the Department of Health)

Description of Samples	Number of Samples
FOODS—	
Aerated Waters	560
Cordials and Fruit Juices	192
Wine	92
Beer	5
Spirits	47
Water	9
Dairy Products	317
Ice Cream and Ice Confections	56
Milk	1 775
Milk (Iodine survey)	232
Cream	164
Butter and Cheese	10
NH & MRC (Market basket survey) waters (17)	
Dairy products (34)	51
Bread	597
Pies	313
Minced Meat	370
Sausages and Sausage Meat	255
Marine products for Trace Metals	449
Fruit and Vegetables	48
Food suspected of deterioration or of containing foreign objects	154
Food Miscellaneous	281
Pharmaceuticals and Scheduled Poisons	180
Drugs for Destruction	322
Paint Scrapings	118
Toys	24
Crayons	427
Soap Disinfectants and Detergents	34
Baits and Suspected Poisons	39
Miscellaneous	265
TOTAL OF ALL SAMPLES	7 386

Departments other than Health submitted 471 samples.

TABLE C
LEGAL SAMPLES TAKEN BY INSPECTORS IN ACCORDANCE WITH THE PROVISIONS OF THE HEALTH ACT

Nature of Samples	Number Examined	Passed the Standard	Failed the Standard
Milk	1 747	1 739	8
Cream	126	125	1
Skim Milk	45	43	2
Flavoured Milk	51	51	0
Minced Meat	364	279	85 (48)*
Sausages and Sausage Meat	244	132	112 (36)*
Meat Pies	52	40	12 (1)*
Bread	33	26	7
Fruit Juices and Cordials	4	2	2
Fruit Juice Drinks and Soft Drinks	2	2	0
Spirits	21	6	15
Pharmaceuticals	325	..	..
Paint Scrapings	96	..	..
Food Miscellaneous	11	..	..
Miscellaneous	3	..	..
TOTAL	3 124	..	..

* The number in brackets indicates appreciable departure from the standard.

MILK PRODUCTS

A total of 2 588 samples of milk, cream, skim milk, ice cream and frozen confections, flavoured milks, butter and cheese were examined.

Only 8 samples of milk failed to conform to the standard in fat, total solids or added water. This is a most satisfactory position. The large majority had a fat content far in excess of the prescribed minimum proportion (3.3 parts per centum); indeed the average fat content was 4.1 per cent. The average freezing point was -0.541°C. All samples labelled pasteurised were heat treated to an acceptable degree. Of the four goat's milk samples received one had an added water content of 30 per cent which might indicate that more extensive sampling of this product is needed.

With skim milk, two of the 45 legal samples contained added water. Yet with quite a number of samples, particularly from country areas, the analysis showed that less water was present than in normal skim milk. The analytical results in these cases were consistent with the product having been made by reconstituting skim milk powder. Several samples of skim milk powder were claimed to be "low calorie" food. Skim milk is not a low calorie food as defined by the regulations.

IODINE IN MILK

Following establishment of suitable analytical methods last year, a continuing survey of milk for iodine content has been carried out during the year.

The initial survey of 109 samples showed the range of levels occurring in Queensland domestic supplies. These values were of assistance in setting a maximum limit for iodine in milk. A range of 90 micrograms per litre, for milk taken straight from the cow, to 1550 micrograms per litre was found with an overall average of 700.

Contamination in milk results from iodophors being used to sterilise dairy equipment with incomplete removal of this material before milk is introduced.

Altogether 232 samples were examined.

TRACE METALS IN FOOD

During the year extensive work was carried out in this field. Cadmium, copper, zinc, lead, tin, nickel and chromium have been estimated on a large number of samples of oysters, mussels, fish, wine, and other foods. Arsenic is also estimated but in this case the older methods are still found to be superior to the more modern absorption methods used for the determination of other metals.

Methods were reappraised and upgraded to give increased sensitivity and reliability.

—	Previous Limit of Detection	Present Limit of Detection with Methods Devised during the Year
	Parts per Million	Parts per Million
Lead	1.0	0.1
Cadmium	0.1	0.01
Nickel and Chromium	1.5	0.5
Mercury .. ..	..	0.03

Increased sensitivity of analytical methods is essential if the limits suggested by the National Health and Medical Research Council are to be accepted. Maximum limits of 0.2 parts per million for lead, 0.05 for cadmium, 0.03 for mercury, have been set for many foods. Previous high allowable levels reflected outmoded technology.

Methods for mercury have been found to be erratic. This has been a common finding of laboratories engaged in collaborative studies. Methods were revised during the year and now give much more consistent results.

The main problem remaining seems to be with sampling. In the case of liquids, mercury is rapidly lost being absorbed into the glass or the plastic of the containing vessel even in quite strongly acid solution.

The submission of these samples by the Water Quality Council was to determine base levels of contamination of the waters of the river and bay. The marine foods submitted were not for human consumption.

Altogether 368 samples of fish, oysters, and mussels were examined for the Water Quality Council and 81 from other sources to determine levels of cadmium, zinc and copper.

Oysters have the ability to collect and store comparatively very large proportions of metallic contaminants contained in their fluid environment.

Present National Health and Medical Research Council recommendations allow 1 000 parts per million of zinc in shell fish, gelatine 100, beverages (5), not more than 40 ppm in any other food. Recommendations for cadmium set a maximum level of 20 times higher than for any other food. Allowable levels of copper and mercury are also much higher than for most other foods.

The above results show a fairly satisfactory position. The limit for mercury in fish (0.5 parts per million) was exceeded only in one sample of Gemfish and two samples of Shark. However in 12 samples received from the University Veterinary School for confirmatory purposes much higher results were obtained; but further sampling from the same source by Health Surveyors did not show high results. In general terms, the larger the fish the more likely it is to have a high mercury content.

Cadmium, copper, zinc, nickel and chromium levels were also satisfactory.

TABLE CI
SAMPLES OF FISH FLESH FOR TRACE METALS

Type of Sample	Mercury			Zinc			Cadmium			Copper		
	n	X		n	X		n	X		n	X	
Whiting	5	0.08	0.06	4	7.1	2.2	4	0.02	0.03	4	0.31	0.13
Bream	10	0.10	0.13	7	5.1	2.3	7	0.01	0.01	7	0.32	0.12
Shark	4	0.51	0.34	1	4.5	..	1	0.01	..	1	0.25	..
Ray	7	0.21	0.20	4	4.5	1.5	4	0.02	0.02	4	0.38	0.14
Garfish	3	0.01	..	3	7.8	..	3	0.01	..	3	0.25	..
Tailor	5	0.17	0.08	4	10.1	4.8	4	0.008	0.003	4	0.94	0.48
Jewfish	1	0.50	..	1	4.0	..	1	0.03	..	1	0.25	..
Marlin	1	0.12	..	..	..	..	..	..	..	..	..	..
Flathead	4	0.03	0.03	3	6.3	..	3	0.03	..	3	0.25	..
Mackerel	1	0.01	..	1	5.0	..	1	0.07	..	1	0.25	..
Dart	2	0.07	..	1	5.0	..	1	0.01	..	1	1.0	..
Flounder	1	0.09	..	1	6.0	..	1	0.01	..	1	0.5	..
Gemfish	1	1.12	..	1	3.0	..	1	0.01	..	1	0.25	..
Mullet	7	0.01	..	4	4.3	0.5	4	0.02	0.02	4	0.69	0.87
Catfish	18	0.07	0.03	18	14.8	3.8	18	0.03	0.04	18	0.41	0.17
Mullet ex Rivers ..	21	0.01	0.004	21	13.2	5.4	21	0.02	0.05	21	0.74	0.66

N = No. of samples examined. X = mean metal content. (ppm) = standard deviation.

ASPARAGUS

A survey of 14 samples of canned Asparagus showed that, with ten samples, severe detinning of the container had taken place. In five cases the level of tin present in the asparagus was in excess of the permitted maximum proportion (250 parts per million). Unless tin salts are present in small proportion, discolouration and loss of flavour occurs in canned asparagus and consequently a limited degree of corrosion of the internal tin plate surfaces is considered to be in accord with good canning practice. Unfortunately, with old stock, corrosion often continues to the extent that the product is contaminated with tin salts to an unacceptable degree. Some imported Taiwanese cans have been internally lacquered with an unlacquered band exposed in an effort to limit uptake of tin by the contents. These cans present an unusual appearance which can cause concern to the consumer.

PAINT SCRAPINGS, PENCILS, TOYS, GLAZED POTTERY

Continuing with work of previous years, samples were received and examined for lead compounds present in pigments used. Other toxic pigments or hazardous materials were also sought.

Although lead compounds were found in 78 of 104 samples of paint scrapings, the use of lead paints on domestic buildings is now a practice of the past. The lead in the scrapings would probably have come from paint applied many years ago. The highest level found was 55 per cent in a grey paint.

Considering that each packet of coloured pencils often contains 12 different colours (32 in one case) and each pencil has at least one outside paint colour, and an internal core to be examined it can be appreciated that a great deal of work was required in the analysis of the many packets (106

received). Lead compounds were found in some brands of Taiwanese and Chinese Pencils. Since samples were submitted chiefly from suspected brands, the proportion of samples failing gives no indication of the overall picture, which is generally very good.

Lead objects were found in some toys (a chain and pendant). Cadmium pigment was found in plastic toys contained in a sample of chocolate eggs.

No harmful material was found in the glazes of pottery and enamel-ware examined. This is probably due to a total prohibition by the Bureau of Customs of the entry of all pottery and enamel-ware containing harmful elements such as Lead and Cadmium.

WINES, BEER AND SPIRITS

For the first time a survey of local and imported wines was carried out, 92 samples being examined. Five samples of Queensland origin had a copper content near the limit 5.0 parts per million. This was far in excess of the level found in other samples but the samples nevertheless conformed to the present standard.

Three samples contained excess preservative and five samples were deficient in alcoholic content. One sample of French Champagne contained excess lead but a further bottle of the same brand did not have an elevated lead content. One complaint sample of Australian Moselle contained a large excess of sulphur dioxide (1 430 mg/l); this was sufficient to cause mild respiratory distress to the consumer.

The four samples of beer showed that water had not been added despite a complaint to this effect.

Water in excess was found in 39 of the 45 samples of spirits examined. Generally however, only those samples which have been tested by an Inspector in the field and have been found to be abnormal are submitted to this Laboratory for analysis.

VINYL CHLORIDE MONOMER

As with biodegradability of detergents, this problem has been largely eliminated at the source of the raw material within Australia.

If any problems arise in the future they will probably be from imported materials.

MEAT PIES

Forty legal samples of meat pies passed the standard out of a total of 52 samples received. Of the 12 failures, only one was deficient in meat content to an appreciable degree.

Following publicity given to the quality of meat pies in Choice Magazine and subsequent enquiries from the public, 65 samples were examined to establish if urea was indeed being included to increase the apparent meat content by increasing the nitrogen content other than from protein. These samples were taken from various parts of Queensland but urea was not present in any samples.

MINCED MEAT, SAUSAGES AND SAUSAGE MEAT

Minced meat samples were submitted for prosecution purposes should non-conformity to the regulations be established, and in 48 cases out of a total of 364 samples, sulphur dioxide was found in quantity. In a further 37 cases trace proportions of sulphur dioxide was found.

Thirty-six out of 244 legal samples of sausages and sausage meat were deficient in meat, contained excess fat or contained excess sulphur dioxide. Farinaceous substance was not present in sausage meat, as required by the regulations, in the majority of a further 76 samples which failed to meet the standard.

BREAD AND CEREAL PRODUCTS

Weights and Measures submitted 91 samples of bread for determination of dry solids content.

The Health Department submitted 506 samples of white, protein increased milk, wholemeal, brown and miscellaneous breads. Of the 50 samples failing to meet the standards 2 white breads were under baked, 4 protein increased breads were deficient in nitrogen, 23 milk breads were deficient in milk solids, 13 wholemeal breads were deficient in wholemeal and 8 miscellaneous samples failed to meet the standard.

Fifty-five samples of flour were examined and were satisfactory.

NON-ALCOHOLIC BEVERAGES

As in previous years large numbers of aerated soft drinks, cordials, fruit juice and concentrated fruit juice samples were examined. It has been found that, with the trend to imported fruit juice concentrates, reliance (of sufficient surety for legal purposes) can not now be placed on compositional factors which were previously used analytically for the determination of fruit juice content,

DETERIORATED FOODSTUFFS AND FOOD CONTAINING FOREIGN OBJECTS

One hundred and fifty-four samples were examined. Foreign objects found included, rodent excreta in 7 samples, part of a rodent in bread, insect larvae, calcium chloride in ice blocks, calcium carbonate on prawns, epsom salts in sugar, insect frass and dates, machinery grease, mould growths, scorched particles, paint flakes, etc.

OTHER SAMPLES

Samples received included drugs and poisons for analysis and scheduling in the Poisons Regulations. Suspected poison baits and a dogs stomach contents were received but in most cases tests proved negative. Hair dyes were examined for the possible presence of paraphenylene diamine or lead compounds which are not permitted.

Sodium fluoride and water samples relating to a Shire water supply were examined. Several Sikes' hydrometers were calibrated for accuracy in determining alcohol content of spirits. Fruit and vegetables were analysed for the presence of pesticides. Honey and glucose samples were analysed and found to be incorrectly labelled in some cases. Sixteen samples of herbal teas were examined but no schedules poison was detected. Prawns were examined for the level of volatile amines as a measure of deterioration. Apricots and apricot oil were examined for the presence of cyanides (this has become a topical issue since laetrile, a glycoside also yielding cyanide on hydrolysis, is receiving some publicity). Containers were examined to assess suitability as poison containers or food containers. Two cans, for use in ice boxes after freezing, for cooling purposes were examined; as with similar products examined previously the constituent of greatest value for this purpose was merely water. Other samples examined were powdered drink bases, coconut candies, solar seal window tinting stripper, epoxy resin glues, etc.

TABLE CII

Source	Number
Department of Health	1 041
Irrigation and Water Supply Commission	3 830
Water Quality Council	2 163
Department of Mines	723
Local Authorities	257
Miscellaneous	401
TOTAL	8 415

During the year the Section has received modern equipment which has enabled it to carry out the analyses more rapidly than in the past. An autoanalyser is on loan from the Water Quality Council which has been increased in function by the addition of other modules whereby elements not possible with the basic instrument are being determined. Every such addition improves the throughput and, notably in the case of Boron, allows the determination to be made with relative ease. Other equipment presently under review for purchase will automate some other aspects of the analysis and in this accelerate the determination of such parameters as pH, alkalinity and conductivity. General comments follow in respect of samples collected and submitted by various Departments.

HEALTH DEPARTMENT

The examinations carried out on these samples were to assist the Health Department to promote, safeguard or maintain the health and well being of the people as required by the Health Act.

The bulk of the samples were from existing town and rural supplies, and new sources being considered for water supplies for general use. These samples were submitted mainly from Local Authorities outside the area served by the Brisbane City Council. Other samples were submitted on behalf of Hospitals, State Schools, Main Road Departments, Forestry Departments and people with home water supplies, and were from reticulated supplies, rivers and creeks, dams, wells, bores and rain water tanks.

The samples were comprised as follows:—

- (a) 629 samples submitted for a general examination to ascertain their suitability from a chemical and physical point of view for use for human consumption and other domestic purposes;
- (b) 282 samples comprised of 270 samples of water, 8 samples of urine and 4 samples of blood submitted for fluoride content only. These samples were from Towns and Cities that fluoridate their water supplies and were to comply with the regular testing required under the "Fluoridation of Public Water Supplies Regulations of 1964";
- (c) 96 samples of swimming pool water were analysed for copper and silver content in connection with the use of ionizing apparatus for the sterilization of water in swimming pools; and
- (d) 34 samples of water were submitted for the determination of trace metals only.

IRRIGATION AND WATER SUPPLY COMMISSION

These samples were submitted for a general chemical analysis to obtain information needed by the commission for its investigations pertaining to the State's water resources. This information assists the Irrigation and Water Supply Commission to fulfil its function of planning for the conservation, replenishment, utilisation and distribution of the waters of the State, both surface and subterranean, to the best advantage in the public interest.

The analyses carried out on the water samples are essential for the assessment to their quality and suitability for specific use such as human consumption, other domestic purposes, irrigation, stock and industry.

Approximately half of the samples analysed were surface water. The remainder were ground water samples. Approximately 40 per cent of the ground water samples were in connection with salt water intrusion studies.

The basic data obtained from each analysis is processed by the Government Chemical Laboratory's computer. On completion of the computations, reports for the Irrigation and Water Supply Commission are printed by the line printer.

These reports contain the analytical results and remarks as to suitability for human consumption, other domestic purposes, irrigation and stock.

The parameters used in the computer programme to assess the suitability for irrigation and stock were supplied by the Queensland Department of Primary Industries.

This method for reporting has eliminated the necessity of forwarding these reports to the Agricultural Chemist for such comments and has meant a substantial decrease in the time lapse between completion of analysis and receipt of completed reports by the Irrigation and Water Supply Commission.

WATER QUALITY COUNCIL

Most of the 2 163 samples submitted by the Water Quality Council of Queensland were from surveys on streams and estuaries throughout Queensland and were in connection with a continuing programme of routine monitoring of water quality. Others were to maintain surveillance over discharges of wastes.

The analysis of these samples were to determine the degree and extent of pollution occurring and to assist the Water Quality Council in ensuring minimal pollution of the aquatic environment of Queensland and in so doing enable the Council to fulfil this aspect of its function as outlined under the Queensland Clean Waters Act.

Approximately 90 per cent of the Water Quality Council samples were water. The remainder consisted of waste water, mud and sludge.

Local Authorities outside Brisbane submitted 234 samples in connection with sewage treatment. These samples consisted of raw sewage, settled sewage, sludge and sewage effluent from the sewage treatment works of the respective Local Authority.

Twenty-three samples of water were received direct from Local Authorities for analysis as to their chemical suitability for human consumption and other domestic purposes.

MINES DEPARTMENT

Seven hundred and twenty-three ground water samples were analysed for the Mines Department. The majority of these were analysed to obtain information related to investigations supported by the Australian Water Resources Council. In addition to the standard analytical requirements for assessing water quality as regards rural or domestic use, the surveys require additional determinations for hydrogeochemical studies.

These studies are applied to defining the relationships between ground water chemistry and aquifer characteristics. They often lead to the identification of the producing aquifer when the geological data are insufficient to do so. The determinations are also used for identifying instances of migration of water between aquifers, and the existence of connate rather than meteoric water. The variations in water chemistry often are too subtle to be recognised from the major anions and cations, and therefore selected trace elements are included in the determinations. The choice of which elements are included is made on the basis of the known geological setting.

MISCELLANEOUS SAMPLES

Four hundred and one samples received from sources other than these were examined by this section during the year. They were as follows:—

- (a) 107 samples for the Department of Harbours and Marine. These were Brisbane River waters for determination of salinity and insoluble matter. They were collected at Lytton Jetty, Cairncross Dock and the Port Office and were in connection with silt deposition in the Brisbane river;
- (b) 99 samples for the Commonwealth Department of Construction—for the Armed Forces;
- (c) 98 samples from Queensland Hospitals—69 of these were from the Renal Section of the Princess Alexandra Hospital and were examined to assess their suitability for dialysis use;
- (d) 61 samples submitted by the public;
- (d) 22 samples from the Forestry Department; and
- (f) 14 samples submitted by other Government Departments.

In addition to the examination and issuing of reports on the above samples, during the past 12 months, over 500 statements of advice as to suitability for human consumption and/or other domestic purposes were issued on behalf of the Department of Primary Industries. These statements were in connection with samples of water analysed by the Agricultural Chemistry Branch.

SECTION 3

FORENSIC CHEMISTRY AND TOXICOLOGY

This section provides an analytical service for the Police Department, Coroners and Health Services throughout Queensland. The scope of the service is outlined in the report under the following categories:—(a) Forensic Toxicology, (b) Alcohol in Biological Specimens, (c) Dangerous Drugs, (d) Forensic Chemistry and (e) Biochemical Tests.

(a) Forensic Toxicology

Examination of visceral specimens received in connection with 416 post mortems was completed during the past twelve months. The majority of these were examined at the request of Coroners. Twenty-seven (27) cases were submitted by Papua New Guinea.

Poisons and drugs which could have a significant bearing on the cause of death were found in specimens from 124 of these post mortem cases. Alcohol was frequently found associated with these drugs and poisons or was the only substance found where no other drug or poison could be detected.

Barbiturates were again the most commonly found group of drugs (58 cases), either singly (31), multiple (11) or in combination with one or more other drugs (16). The cases in which the following particular barbiturates were found were pentobarbitone (38), amylobarbitone (18), quinalbarbitone (9), phenobarbitone (3), butobarbitone (1) and cyclobarbitone (1). Other drugs found associated with barbiturates were—amitriptyline, carbromal, chloroquine, chlorpromazine, codeine, diazepam, glutethimide, imipramine, orphenadrine, oxazepam, paracetamol, prochlorperazine, promethazine, salicylates and trifluoperazine.

Cases in which toxic levels of other drugs were found (54) were chloral (11), chloroquine (10), alcohol (5), morphine (3), propoxyphene (3), chlorpromazine (2), doxepin (2), ethchlorvynol (2), methadone (2), orphenadrine (2), salicylates (2) and one each of amitriptyline, carbamazepine, cocaine, glutethimide, imipramine, methaqualone, phenytoin, propranolol, promethazine and sulthiame.

Cases in which toxic levels of agricultural or pastoral poisons were found (8) were—arsenic (3), strychnine (3), diazinon (1) and endosulfan (1).

In 4 cases toxic levels of carbon monoxide were found.

Of the remaining cases, drugs in therapeutic or non lethal quantities were found in 136 cases (73 of which contained alcohol) and no drug or poison was detected in 156 cases.

Forty-seven specimens of animal viscera and suspected baits were examined for the presence of poisons. Poisons detected were—strychnine (18), aldrin (1), diazinon (1) and metaldehyde (1).

(b) Alcohol in Biological Specimens

The number of specimens tested under the provisions of the Traffic Act for the presence of alcohol was 1 234.

Of the 28 specimens examined, 19 were found to contain the following drugs:—diazepam (10), pentobarbitone (3), oxazepam (3), methaqualone (2) and amylobarbitone (1). Again few of the blood specimens obtained from motorists suspected of driving under the influence of a drug were accompanied by a urine specimen. With urine, the specimen provided is usually greater in both volume and drug content. Examination of the urine increases the probability of detection and proper identification of the drug present. Sufficient volume of blood is then available for the accurate determination of the level present from which meaningful interpretations can be deduced.

The number of specimens of blood, urine and other biological fluids tested from post mortem cases (not associated with visceral specimens) was 793. Carbon Monoxide levels were determined on 21 of these specimens.

The number of specimens of blood and serum submitted by miscellaneous sources was 97.

Approximately 5 000 bottles of Standard Alcohol Solution were prepared and supplied to the Police Department for use in the operation of the Breathalyzer. 233 ampoules, representing one per cent random sampling of ampoules supplied by a manufacturer for use with the “Breathalyzer” were tested and found suitable. The Supervising Chemist of the section assisted with the lecturing of police personnel attending a course provided to train operators of the “Breathalyzer”.

(c) Dangerous Drugs

The 617 items examined under this category included cannabis (166), smoking devices (234), narcotics (57), syringes and spoons (94), methaqualone (22), mushrooms (11), LSD (10), barbiturates (6) and other drugs (17).

This year has seen a further decline in the total number of samples submitted for drug identification due principally to the diversion of samples of plant material to the Government Botanist for botanical identification which can be accomplished more rapidly than chemical testing. However, there has been significant increases in the numbers of other samples submitted for examination, particularly smoking devices, syringes, heroin, methaqualone and mushrooms.

(d) Forensic Chemistry

This classification covers a variety of samples (48) submitted by the Police and other Departments. Some of these investigations included clothing for the presence of paraffin products, comparison tests on metal drillings from burgled safes, soil comparison tests, paint comparison tests, alcohol content of fluids, volatile component in a glue sniffing case, presence of DDT in bee hives, identification of poison in soil, drug in custard, fluid as concentrated Hydrochloric Acid and twenty-nine powders for identification.

The above listing gives an indication of the diversity of the samples encountered and the wide range of experience required of the chemist.

(e) Biochemical Tests

Included in this category are the specimens which have been obtained from living persons except for the bone specimens for lead determination. The specimens have been submitted by Hospitals, Medical Practitioners, Government Medical Officers, Director of Industrial Medicine and Pathologists. Of the 2 510 specimens submitted, 1 102 were tested for trace metal content and 1 408 were tested for drug level.

Trace metal determinations were lead (913), arsenic (98), Mercury (40) and other metals (51) which included:—aluminium, bismuth, cadmium, chromium, cobalt, copper, gold, magnesium, nickel, thallium and zinc.

Drug level determinations were phenytoin (866), other anticonvulsants (152), barbiturates (54), drug screens (250) and miscellaneous drugs (86), which included tricyclic anti-depressants, phenothiazines, benzodiazepines, cyanide, bromide, fluoride, glutethimide, lignocaine, methaqualone, methadone, paracetamol, pethidine, paraquat, quinidine, salicylates and theophylline.

The popularity of monitoring drug levels of patients on anticonvulsant therapy has apparently created an awareness amongst medical practitioners of the need to supervise the levels of other drugs as both the range has diversified and number of tests has increased by an amount (500) similar to the increase on the previous twelve month period. If this higher demand for laboratory tests is maintained in the forthcoming year then additional staff, equipment and laboratory space will be required to provide a prompt service.

General

Members of the section attended the various Courts throughout the State on 116 occasions.

In October, 1976, the Supervising Chemist attended the Annual Interstate Conference of Forensic Toxicologists and the Annual Conference on Illicit Drugs which were held consecutively in Melbourne. Both Conferences provided the opportunity for the exchange of much useful information which assists in keeping the techniques of the Section abreast with current developments. This trip also provided the opportunity to examine new equipment under consideration for this laboratory but not available in Brisbane.

SECTION 4

GOVERNMENT CONTRACTS

(a) Stores

This sub-section is concerned with a variety of sample types. They relate principally to the purchasing of stores for government use for the purpose of offering advice as to the best proposition for purchase. The samples examined here are mostly on the basis of work specialisation. Details of the number of samples and the originating department are as below.

TABLE CIII

Source					Number of Samples
State Stores Board of Queensland	..	..	..	..	373
Health Department	..	..	..	..	17
Prisons Department	..	..	..	..	2
Department of Education	..	..	..	..	4
Railways Department	..	..	..	..	1
Total	..	..	..	..	39

The table shows that the State Stores Board is the principal client department. Much of the work is concerned with the testing of woven textiles. This requires a special room with controlled standard atmospheric conditions for the operation of the Tensile Testing Machines used for ascertaining the breaking force of materials. These machines are regularly checked by the appropriate authority i.e. the Engineering Department of the University of Queensland, and are subject to assessment by the National Association of Testing Authorities (NATA).

(i) STATE STORES BOARD

A large range of textiles for Government Service Requirements was examined during the year under review. Tenders for textiles are usually to State Stores Board specifications or to the firms nearest regular production line. Tender samples were examined and recommendations made concerning the samples taking into consideration price and quality. In some instances recourse was made to previous samples examined to provide a suitable standard for textiles being produced by another manufacturer. Delivery samples are regularly tested for comparison with the standard of the tender sample and the requirements of the specifications.

A range of materials for the making of uniforms was examined. The uniform materials are for the requirements of Institutions, Police Department, Prison Department and other government departments, Wool/polyester blends are used for uniforms together with polyester/cotton fabrics for shirting.

Two samples, one of Black Italian Cloth and the other of White Ribbed Poplin, were received from the Agent General, London. The samples were tested for tensile strength by both the constant rate of extension and the constant rate of loading methods. The samples had previously been tested in the United Kingdom and were sent to us for comparison strength tests. The results of our tests were found to be in general agreement with the results obtained from the United Kingdom tests.

Plain bleached sheeting, twill bleached sheeting, bed sheets and pillowcases, and plain unbleached sheeting were examined for tenders and delivery samples tested. Sky blue cotton poplin for making mens pyjamas was tested and a recommendation was made. Other samples submitted were khaki drill, headcloth huckaback towelling and blue denim.

Samples of flannelette for apparel use, including the making of childrens night-clothes, were examined. This flannelette is now supplied with a flame retardant finish. The Pyrovatex flame retardant finish is used on the flannelette. The treated fabric has been tested by an outside authority for flammability and it meets the requirements of Australian Standard 1248—1972 “Fabrics Described as of Low Flammability”.

Samples of towelling were tested to facilitate local manufacture. Turkish bath towels and Turkish roller towelling were examined and a suitable standard was set for the towelling. Terry towelling and terry towelling nursery squares were also tested regarding suitability for government use and advice was given for their manufacture. A suitable standard has now been obtained for the local manufacture of towelling.

Tender samples of royal blue shrink resistant hospital blankets and white bassinette shrink resistant blankets were examined and a recommendation was made for the purchase of blankets.

A range of detergent based products and cleansers were examined. Abrasive detergent powders (foaming cleansers) were tested and a recommendation was made taking into account recent changes in the composition of this product as available on the local market. Account has to be taken of the changing styles in this type of product reflected by manufacturers introducing new product composition with consequent allowance in analysis and specifications. Other products examined were light duty liquid detergents (hand dishwashing type), general purpose detergent powders, blanket washing detergent powders and washing soda. Pine Oil Cleanser/Deodorants and bed pan cleansers were also examined for tender purposes.

Samples of coffee, instant coffee and tea were tested for tender purposes. Ball point pens, cellulose tapes and clear liquid gums were also examined for suitability for government service requirements. A range of insecticides was tested for compliance with the requirements of the specifications for insecticides for government service requirements.

A range of paper roll towels and interleaved paper towels, both regular and economy type, were tested so that a recommendation could be made for the selection of the most suitable type for government service use, considering both price and quality.

(ii) HEALTH DEPARTMENT

Samples of white Grecian quilt materials were examined in connection with the purchase of quilts for issue to country hospitals.

Two samples of lightweight disposable arm slings were examined. One of the samples was made of spun bonded filament nylon in a random web fabric. This sample had good fire retardant properties and it was considered to be suitable for hospital use. Advice was also given to the Health Department concerning the best method of washing flannelette treated with the Pyrovatex flame retardant finish.

Samples of polyurethane coated knitted nylon raincoat materials were tested in connection with tenders for raincoats.

(iii) PRISONS DEPARTMENT AND RAILWAYS DEPARTMENT

Wool/polyester uniform material was submitted by the Prisons Department and polyester/cotton shirting was examined for the Railways Department.

(iv) EDUCATION DEPARTMENT

Both tender and delivery samples of the swimming pool chemical calcium hypochlorite were examined in connection with the chlorinating of school swimming pools and complaints concerning product quality.

(b) Paints (Works, Housing Commission)

TABLE CIV
SAMPLES EXAMINED

Source of Sample						Number of Samples
Housing Commission	..	..	..	..	..	2 532
Works Department	..	..	..	..	..	1 209
TOTAL	..	..	..	..	..	3 741

There was a considerable decrease in the number of samples submitted by the Housing Commission this year. On the other hand samples examined for the Works Department were three times as numerous as those submitted during 1975–76.

All paint samples from these two sources were examined to check that private painting contractors were using paints conforming to Government specifications and requirements on buildings constructed for and by the State Government and which are controlled and maintained by the Government.

Approximately 16 per cent of samples from the Queensland Housing Commission did not conform to specification, the main types of non-conformity being pigment deficiency and vehicle deficiency.

Of the samples submitted by the Works Department, 7 per cent failed to conform to specification. Excessive volatiles and vehicle deficiency were the main non-conformities in this group of samples.

SECTION 5
MINING AND SECONDARY INDUSTRIES

Table CV gives the numbers and sources of samples received by the section during the year.

TABLE CV

Department	Samples
Mines—	
Geological Survey Office (ores, minerals and geochemicals)	2 569
Geological Survey Office (coal)	38
Coal Board	629
Mines Inspectorate and Gas Engineer	875
Cloncurry Assay Office	1 534
Health (Directorate of Industrial Medicine)	543
Other Government Departments	562
Public	120
	6 870

It must be appreciated that these numbers bear little relation to the volume of work undertaken by the section. Frequently a single sample may have as many as twenty individual determinations carried out on it and some of these may themselves be very time consuming. Further, the Spectroscopic Laboratory Sub-section acts as a general service area to the whole laboratory. In addition a great deal of advisory work, both internal and external, is carried out.

Samples received from the Cloncurry Assay Office, the Geological Survey Office and Mines Department, and the Directorate of Industrial Hygiene make up the major portion of the above table, but there has also been a large increase in the number of samples submitted by the Water Quality Council. These have originated from a continuing survey of the sediments being deposited in both Moreton Bay and the rivers and streams of Queensland. Analyses are made of the more significant heavy metals which enter the water from industrial wastes and are ultimately deposited in the mud.

Oils and other organic pollutants continue to be identified in samples submitted by the Water Quality Council, the Department of Harbours and Marine, and various Harbour Boards, including the newly formed Port of Brisbane Authority. The analytical results have been used in legal actions taken by the Crown against various offenders.

Since the reappointment of a dust sampler by the Mines Department, work has increased in the area of respirable dust in air and roadway dust in Queensland underground coal mines and open cuts. In the current programme the roadway dust samples from ten mines have been satisfactory but the rates of failure from others have varied from ten per cent to ninety per cent of the samples submitted. The respirable dust work has confirmed previous experience in that most underground areas are below the acceptable threshold limit value whereas the overburden areas of most open cut mines are above it.

Examinations of diesel exhaust gases carried out for the Mines Department this year have confirmed previous comments on this matter, namely, that if the results lie outside norms established for each make of engine a mechanical fault has occurred in the engine under test. One engine was tested on three separate occasions and found to have excessive exhaust emissions before the fault was discovered by the supplier's engineers. The camshaft was being run at a speed in excess of that recommended by the shaft's manufacturer—even though that speed was stamped on the end of the camshaft.

Clay assessments, limestone analyses and sand and gravel tests for the Geological Survey Office are made to assist in regional planning surveys. Their numbers are similar to those received in previous years. However the number of geochemical samples received has declined.

During the year, two gas chromatographs were delivered on loan from the Port of Brisbane Authority to facilitate the identification of oil spill samples. A further gas chromato-

graph was received from the coal mines inspectorate for the analysis of samples from mine airways. With this additional equipment, the section is moving towards the modern concept of efficient dedicated equipment rather than the more cumbersome multipurpose equipment of the past and this is proving to be advantageous.

The greater awareness of safety in underground coal mines is in part reflected in the numbers of gas samples received from the mines inspectorate, together with the ever increasing numbers of portable instruments which are received for maintenance and calibration. Considerable expertise in many aspects of safety in mining is being gained by the staff of this section.

Potential hazards from breakdown of high voltage insulators and leaking polychlorinated biphenyl transformer oils in the mines were investigated during the year. The source of a serious heating at Box Flat No. 8 Colliery was located by gas analyses done in this laboratory and prompt action by the mine management and inspectorate averted a serious situation.

The decrease in oil and gas drilling in Queensland is reflected in the numbers of natural gas and condensate samples received.

Industrial Hygiene factory inspection and sampling programmes have been time-consuming, but rewarding in that they improve the safety of working conditions in the factories visited. Unfortunately shortage of staff imposes limitations on the proportion of the State's many factories which it is possible to investigate. As an example of the service provided, regular analyses are made of the uranium content of the urine of the workers at the Mary Kathleen uranium plant. This is done to afford an independent check on similar testing done by the works laboratory.

A staff member lectured the State Conference of Fire Engineers on the subject of spontaneous combustion. Matters raised included coal mine heatings and the formation of explosive atmospheres of hydrogen by the bacterial action of Clostridium Butyricum on sugar solutions. Considerable interest was also shown on the question of the provision of a national central computer bank of information on toxic and hazardous chemicals. This has been recommended by the Australian National Health and Medical Research Council reference subcommittee on Industrial Medicine and by the Australian Environmental Council working group on environmentally hazardous chemicals.

SECTION 6
COMMONWEALTH DEPARTMENTS

In the other states of Australia including the Northern Territory, the Commonwealth Department of Science through the Australian Government Analytical Laboratories, supplies a chemical laboratory service to Commonwealth Departments. In Queensland this service is supplied by sub-sections of this state laboratory on a cost charge basis. The service is spread through a number of sub-sections which have the expertise and equipment appropriate to the nature of the examination required. The principal departments serviced are the Bureau of Customs and the Commonwealth Department of Primary Industry.

(a) Bureau of Customs

The Bureau of Customs requires that samples which it gathers and forwards to the laboratory, be analysed for a variety of purposes. The necessary documentation is always supplied with the samples. Reporting is simplified by using the same documents with reports typed on the reverse side. The Commonwealth Department of Science outposts an experienced chemist to the Customs House, Brisbane. It is his duty to deal with that facet of documentation which relates to Tariff Classification. This classification system, of International basis is used for the purpose of levying import duties if any and simultaneously by use of computer codes, to provide statistical data on imports to the Australian Bureau of Statistics. Coincident with this system is a By-Law System which provides for entry of imports free or at Concessional rates, under prescribed conditions. A working knowledge of these complex systems is necessary for either the chemists involved in the Analytical work or their immediate supervisor. Otherwise much expensive laboratory time can be spent on analyses of no meaningful value to produce information not required. In addition to this part of the work further analyses or specific tests are required to ascertain that imported goods conform with the requirements of a number of standards operated under the Customs (Prohibited Imports) Regulations. Principal amongst these are those relating to the level of mercury in imported fish and the amount of leachable lead and cadmium salts in glazed ceramic tableware. Both of these standards have now been in operation for some years so that manufacturers overseas and Australian importers are well aware of the requirements. The permitted

level of mercury in fish (0.5 parts per million) is based on U.S.A. standards adopted by the National Health and Medical Research Council of Australia. The British Standard Method and the permitted levels of lead and cadmium in various types of ceramic ware described therein are the basis for the Australian Regulations.

A new feature introduced this year is the testing of imported pencils for the lead content of their external paint. The presence of more than 0.25 per cent lead in the paint leads to declaration of the pencils as prohibited imports. This testing only follows statutory rules, in general, of the State of Queensland, which has for over forty years exercised a number of powers designed to remove poisonous metals from human contact and ingestion, especially where children are likely to be involved. Queensland has lead the way in this type of public health measure. However, it is much more practical and realistic to exercise this power at point of entry to this country rather than after the products are dispersed to resellers by the distribution network. One laboratory sub-section documents and prepares the samples for determinative analysis by another sub-section specialised in atomic absorption analysis.

The number of samples analysed in connection with investigations into illicit alcoholic liquors, liqueurs and associated operations has declined markedly during the current year.

The contents of all reports are a confidential matter between this laboratory and the Bureau of Customs. Hence no discussion may be presented concerning the detail of the reports. Information may only be presented in the following general form.

Table CVI below shows the reasons for the submission of samples from the Bureau of Customs.

TABLE CVI

Reason for Submission	Number of Samples
Analysis and report for tariff classification	715
Excise Investigation	18
Prevention and Detection of Prohibited Imports ..	21
Import Quality Control—	
(a) Fish and associated edible marine products ..	199
(b) Glazed Ceramic Tableware	803
(c) Pencils	198
Miscellaneous	1
TOTAL	1 955

The table shows an increase in tariff classification samples of about 10 per cent over last year. However, with the exception of pencils, numbers for the other classes of samples have declined so that the total throughput remained about the same as last year.

The following dissection in Table CVII shows the diversity of sample types examined during the year.

TABLE CVII

Nature of Sample for Tariff Classification	Number of Samples
Plastic Sheet and Articles	191
Paper	117
Textile fabrics (woven and non-woven) textile articles and yarn	108
Chemical Products (Mixtures and Preparations) ..	74
Food Products	68
Organic and Inorganic Chemicals in laboratory or commercial grades	38
Wines and Spirituous beverages	22
Rubber and rubber products	17
Metal and metal products	17
Synthetic resins and polymers in powder and solution form	15
Miscellaneous manufactured articles including medicaments	12
Paint and pigments (organic and inorganic)	10
Miscellaneous Natural Products (including minerals)	8
Oils and Waxes	8
Surface Active Agents	6
Adhesives	4
TOTAL	715

Miscellaneous manufactured articles includes calcium silicate board, filters, articles of horn and of peat.

Miscellaneous natural products includes timbers, leather, essential oils, seeds and walnut shell flour.

(b) Primary Industry

Table CVIII below lists details of work performed for the Commonwealth Department of Primary Industry.

TABLE CVIII
SAMPLES EXAMINED

Nature of Sample	Number of Sample
Anhydrous Milk Fat	18
Butter and Tinned Table Butter	12
Butter Concentrate (Butter Mix)	12
Casein	517
Cheese	225
Condensed Milk	32
Cream	17
Dried Buttermilk	9
Dried Full Cream Milk	99
Dried Skim Milk	114
Ghee	8
Ice Cream	14
Junex (and Meletone)	84
Dried Milk-based Baby Food	22
Liquid Milk Infant Food	1
Milk—	
Ultra Heat Treated (U.H.T.)	147
Flavoured	8
Sterilised	6
Coffee and Milk	10
Dairy Ice Mix (Dry)	6
Flavoured Dried Milk Product	10
Canned Fruit	10
Canned Fruit Juice	4
Flour	6
Honey	68
Margarine	14
Pasteurised Frozen Liquid Whole Egg Pulp	297
Shrimps (Prawns)	151
TOTAL	1 921

The following samples did not conform to standard—
9 samples of standard grade casein contained excess fat;

- 3 samples of extra grade casein contained excess fat;
- 5 samples of extra grade casein had excessive free acidity;
- 7 samples of extra grade casein contained excessive lactose;
- 1 sample of extra grade casein contained excessive sediment;
- 3 samples of extra grade casein contained excessive iron;
- 5 samples of standard grade casein contained excessive iron;
- 28 samples of cheese contained excessive moisture;
- 4 samples of cheese contained less than the minimum proportion of fat;
- 22 samples of dried full cream milk had higher solubility indices than required by the Commonwealth Food Specifications;
- 1 sample of dried full cream milk had an excessive scorched particle count;
- 4 samples of dried skim milk had an excessive scorched particle count;
- 1 sample of Ultra Heat Treated (U.H.T.) milk contained less fat than the minimum permitted proportion;
- 5 samples of Ultra Heat Treated (U.H.T.) milk contained less “solids not fat” than the minimum permitted proportion;
- 4 samples of ice cream were deficient in food solids per litre;
- 10 samples of shrimp contained excessive total volatile base nitrogen;
- 3 samples of shrimp contained excessive trimethylamine;
- 5 samples of shrimp contained excessive proportions of sulphur dioxide;
- 4 samples of shrimp contained excessive proportions of salt (sodium chloride).

When compared with the list of samples submitted for the year 1975–1976, it will be seen that those submitted this year show considerable variation in numbers, especially in dairy industry products.

The number of samples of butter and its by-products of manufacture decreased considerably while those samples based on whole milk showed a marked increase.

This work is performed in order to see that exported foods conform with the requirements of the Commonwealth Export Standards and in some cases, of the standards of the importing countries. These standards are adopted to protect the name of Australia on export food markets.

SECTION 7
PESTICIDES

The following table CIX furnishes the details of the departmental and sectional source and nature of the samples received, together with the reason for analysis, for all samples received within this sub-section during the current year. As well as those reported directly to the originating department where they are submitted for pesticide residue analysis only, the table also includes those samples from other sub-sections of the laboratory where pesticide analysis is a part of the overall examination of the sample.

TABLE CIX

Department or Sample Source	Pesticide Category	Sample Type	Number of each Type	Total Number from Source
Commonwealth Department of Primary Industry (New South Wales and Queensland Regional Offices)	Organochlorine	Butter	68	944
		Cheese	35	
		Whole Egg	253	
		Egg Pulp	37	
	Organophosphorus	Butter	86	
		Cheese	23	
	Organochlorine plus Organophosphorus	Butter	296	
		Cheese	96	
Water Quality Council	Mercury	Egg Pulp	50	1 242
	Organochlorine plus Polychlorinated Biphenyls Chlorophenoxy Acid Herbicides	Water	417	
		Mud	448	
		Water	2	
		Fish and Molluscs	375	
Health (Public Health and Investigation)	Organochlorine	Ice Cream	15	
		Water	14	
		Milk	11	
		Vegetables	2	
		Fish	7	
		Lima Bean Extract	6	
	Organophosphorus	Flour	13	
		Malathion dilution	1	
		Canned Food	6	
		Coconut	1	

TABLE CIX—*continued*

Department of Sample Source	Pesticide Category	Sample Type	Number of each Type	Total Number from Source
	Organochlorine plus Organophosphorus ..	Meat Extract Dog Bait Extract Water Fish Vegetables Milk Sweepings from Railway Carriage	1 5 1 1 2 1 1	
	DSMA and Diuron Endrin and Parathion ..	Water Water	14 115	
	Monocrotophos and Fenitrothion	Water	8	
	Herbicides (Cl. phenoxy acid)	Plants	1	
	Dieldrin, Azodrin, 2,4-D and 2,4,5-T	Swabs from Residence	4	
		Sub-Total	230	
Complaint Samples	Organochlorine	Fish Sugar Cubes and Instant Coffee ..	3 3	
	Organochlorine plus Organophosphorus ..	Vegetables Mundubbera Hospital Water ..	4 2	
		Spray mixture preps.	2	
	Ethion	Water	1	
	Picloram + 2,4-D	Water	1	
		Sub-Total	16	
Industrial Medicine	Organochlorine	Blood	259	
	Organophosphorus	Blood	5	
	Organochlorine plus Organophosphorus ..	Blood Urine	6 5	
	Polychlorinated Biphenyls	Blood Urine Mud Water	10 4 1 1	
	2,4-D		2	
	Picloram		1	
	Paraquat plus Organochlorine	Blood	2	
	Pentachlorophenol	Blood	1	
	D.N.O.C.	Blood	2	
	Pentachlorophenol	Blood	1	
		Sub-Total	300	
Laboratory of Microbiology and Pathology	Organochlorine and Organophosphorus ..	Mouse Food	1	
Maternal and Child Health	Organochlorine	Perinephric baby fat Human Breast Milk	23 188	
		Sub-Total	211	
	TOTAL FOR HEALTH DEPARTMENT .. ..		..	757
Toxicology and Forensic	Organochlorine plus Organophosphorus ..	Dead Bees and scrapings from hives Unknown Liquid	4 1	
	Parathion	Blood Liver Concentrate	1 1 1	
	2,4,5-T	Blood	1	
	Endosulphan	Blood and Liver Extracts	2	
	Diazinon	Blood and Liver	2	
				13
Bureau of Customs	Organochlorine plus Organophosphorus ..	Olive Oil	2	2
Department of Harbours and Marine	Organochlorine plus Organophosphorus	Water	3	3
Director, Government Chemical Laboratory	Pentachlorophenol	Wood Pulp	1	1
University of Queensland	Dieldrin	Water	1	1
Gladstone Harbour Board	Organochlorine plus Polychlorinated Biphenyls	Mud ex Gladstone Harbour ..	1	1
		TOTAL		2 964

COMMENT

Commonwealth Department of Primary Industry

The continuing survey of butter and cheese samples from N.S.W. and Queensland, as per the pre-arranged programme, showed a decline in the total number of samples this year. However this is counterbalanced by an increase of over 100 per cent in the number of samples examined for both types of pesticide. The sampling of egg pulp for mercury estimation is now on a weekly basis with an increase in the total number of samples received over the previous year. All of the information concerning results under this heading is reported by an NCR system which minimises paper work and speeds reporting to the Central Collating Authority in Canberra. This department (Commonwealth D.P.I., Pesticides Co-ordinator) issues quarterly confidential summaries of results obtained throughout Australia to participating laboratories and to State Departments of Health. As the basis of this work is for economic (trade) reasons as well as health, such reports are not publicly available nor should they be for they require specialist expert interpretation.

During the latter part of 1976, the complete results and comment on an extensive interstate and international collaborative study on the determination of organochlorine pesticides in butter oil became available. The laboratory participated in this study in December, 1974. Because of many problems, the report took a lengthy time to complete. The results of the study have been applied to current techniques in this laboratory with the aim of improving accuracy.

Water Quality Council

The work load from this authority remained fairly constant as compared with last year. All of the results obtained have been communicated to the submitting authority in the Department of Local Government for their application in the search for pollutants of waterways.

Health Department

A slight overall increase in samples from this department was due mainly to an investigation of water courses in the Balonne area (Condamine R.). This investigation arose from a search for lost drums of endrin and parathion and attempts to exclude the possibility of stream contamination. Some of the other food and water samples originated from a National Health and Medical Research Council survey which now calls for analysis of the materials to be made in the State of origin. So far as dairy foods are concerned, the best indicator of the overall situation is that obtained by the regular widespread checks run through sampling by the Commonwealth Department of Primary Industry, as indicated above. The results obtained are always related to the pesticide content of cows milk fat. Further detail concerning food under this section might be found under the Food and Drug Section (Section 1 of this report).

Industrial Medicine and Related Samples

This includes samples received from private Medical Practitioners and Pathology (Medical) Laboratories for pesticide levels as they are few in number compared with the number of samples received from the Director of Industrial Medicine. The results of a number of surveys of differing occupational groups conducted by the Division of Industrial Medicine, account for most of the samples under this heading. The total number of samples, which are mostly of blood, remained fairly constant.

Maternal and Child Welfare

The nature of the work for this sub-department changed in character during the year. The submission of specimens of human baby fat from stillborns and neonatal deaths was discontinued during the year. A large number of human breast milk samples was examined for organochlorine pesticides during the latter part of the year. This survey is continuing into 1977-78. The overall effect was a marked increase in the total number of samples from this sub-department for the year. The table below deals only with pesticides detected, the range of results and geometric mean. Results given must of necessity be on a concentration in fat basis because of the nature of the Method of Survey. The samples were collected in the area in and surrounding Brisbane.

With the exception of dieldrin, which has remained constant, the levels of the other major organochlorine pesticides has shown a marked decline since the survey of 121 samples reported in the Annual Report for 1973-74.

TABLE CX
HUMAN MILK
188 Samples
PESTICIDE CONCENTRATION IN MILLIGRAMS PER KILOGRAM OF
FAT IN MILK

Name of Pesticide	Geometric Mean	Arithmetic Mean	Range
Hexachlorobenzene	0.66	1.04	0.05 to 10.26
Dieldrin	0.42	0.62	Less than 0.1 to 6.5
Total DDT (includes metabolites of DDT)	2.3	3.6	Less than 0.1 to 31.2

Instrumentation

An automatic gas chromatographic analyser for organochlorine pesticides, mentioned in the report for the previous year, was brought into operation during the current year. The laboratory is now well equipped to deal with this aspect of the work. It is hoped that a similar type of instrument which can be used for the automatic determination of both organophosphorus pesticides and those containing sulphur in the molecule will be approved for purchase during the 1977-78 financial year. As some of the principles of detection are more complex, the new proposal is more expensive than the first automatic gas chromatograph. Approval for the purchase of a densitometer for quantitating thin layer chromatographic plates was given during the year. This device should soon be available for use in the laboratory for all types of TLC analyses, a technique of widespread use.

SECTION 8

THE EXPLOSIVES ACT 1952-1975

LEGISLATION

The following explosives were classified by Order in Council:—

I.C.I. AUSTRALIA LIMITED

Nonel
Nonel System
Flexicord

DEPARTMENT OF INDUSTRY AND COMMERCE

Johnson TNC Formula B

COMMERCIAL BANK OF AUSTRALIA LIMITED

Smoke Candles

Amendments to Existing Authorisation

Pourvex Extra renamed Tovex PX
Hail Prevention Rockets reclassified
Anti-Hail Rockets Propelling Section
Anti-Hail Rockets Explosive Section

The Regulations were amended in December, 1976, in several respects dealing with the carriage, sale and use of explosives.

It is now necessary for any person who uses explosives, other than on a mine or quarry to have a Shotfirer's License or a Shotfirer's (Restricted) License. Courses have been arranged which cover both the understanding of the care in use and the correct way to use explosive and includes a period of practical involvement.

Possession of a certificate following this course or a similar one will be a prerequisite for the issue of a license.

Explosives may not be sold to any person who does not hold a license unless he is involved in mining or quarrying under the Mines Regulation Act.

That part of the Regulations dealing with carriage now includes a statement of the conditions which must be observed by vehicles carrying explosives in loads in excess of one tonne.

IMPORTATION

(a) Overseas

Again there was only one consignment of explosives (14 900 cases) imported at Port Alma.

(b) Interstate

Explosives entering by rail are either sampled at Helidon or are accompanied by samples consigned to Helidon. Explosives which enter by road are sampled at Helidon.

DESTRUCTION OF EXPLOSIVES

The undermentioned explosives being unsafe for use were destroyed:—

Safety Fuse—27 cases;

70 tonnes of gelatine explosives were transferred from Helidon to Wallangarra by the owners acting in conjunction with the Army and will be destroyed at that place by the Army.

INSPECTION OF MAGAZINES AND FRUIT RIPENING ROOMS

Magazines

Beaudesert	Woombye
Kooralbyn	Palmwoods
Redcliffe	Nambour
Redland Bay	Buderim
Glen Aplin	Maroochydore
Stanthorpe	Mount Beppo
Warwick	Mudgeeraba
Allora	Woodridge
Nanango	Southport
Kingaroy	Wivenhoe Dam
Wondai	Redbank Plains
Murgon	Colleyville
Kilkivan	Mackay
Gympie	Pimpama
Pomona	Beenleigh
Noosaville	West Burleigh
Yandina	Gilston
Biloela	Maryborough
Capella	Pialba
Miriamvale	Bundaberg
Rockhampton	Gladstone
Beerwah	Ipswich
Landsborough	

Fruit Ripening Rooms

Brisbane	Rockhampton
Caboolture	Cairns
Gympie	Applethorpe
Maryborough	Stanthorpe
Bundaberg	

The Government Magazines are inspected frequently. The reserve at Queerah was affected greatly by the flooding in the Cairns area. At one stage it was impossible to move explosives into or out of the magazines because of washouts and the continued boggiess of the ground.

Manufacture

Following accidents which took place overseas in relation to one of the ingredients used by Du Pont (Australia) Ltd at their Bajool Factory, this Company has now extended their factory so that it can now manufacture this ingredient from the raw materials thereby lessening the risks in handling, particularly during transport of the ingredient.

All factories are regularly visited by an Inspector and the required standards of safety are maintained.

The manufacture of AN/FO under Regulation 25A is permitted provided the licensee is also the holder of a Shotfirer's License unless the use of the AN/FO relates to mining.

Ammunition

A close watch is kept on all safety ammunition imported into the state and all new brands and types are tested with the co-operation of the Police Department.

Licenses and Fees

Table CXI shows licenses issued or renewed as at the 30th June, 1977, and the fees and charges collected:—

TABLE CXI

Category	Licenses in Force at 30th June, 1977	Fees
		\$
Import and Export	50	1,350.00
Manufacture (ANFO)	183	3,600.00
Manufacture	3	180.00
Carriage	38	630.00
Storage	247	2,984.00
Sale	82	984.00
Fruit Ripening Rooms	23	300.00
Shotfirer's	72	1,119.00
Shotfirer's (Restricted)	8	
Ammunition Imports .. ..	..	1,064.80
Fireworks Imports .. ..	..	33.00
Explosives and Accessories Imports .. ..	..	2,791.59
Magazine Storage Charges—		
Helidon .. ..	..	11,225.70
Bajool .. ..	..	31,777.90
Brookhill .. ..	..	3,194.20
Queerah .. ..	..	509.30
Heat Testing Charges .. ..	..	663.75
Sampling Charges—Regulation 12 (4) .. ..	..	1,371.90
Miscellaneous Collections .. ..	..	97.00
TOTAL	706	\$63,947.14

DIVISION OF GERIATRICS

Director of Geriatrics: (Position Vacant).

Medical Officers:

Brisbane—

P. M. BRETT, M.B., B.S.(Melb.), Dip.Obst., R.C.O.G., London 1949.

R. G. CARGILL, M.B., B.S.(Qld.).

A. D. TONKIN, M.B., B.S.(Adel.).

Maryborough—(Part-time)—P. M. MILLER, M.B., B.S.(Qld.), F.R.A.C.S.

Toowoomba—(Part-time)—E. ROBINSON, M.B. B.S.(Shef.), T.D.D.(Wales), D.P.H.(Lond.).

Regional Geriatricians:

Rockhampton—B. G. WALKER, M.B., B.S.(Qld.), M.R.A.C.G.P., D.P.R.M.(Syd.).

Townsville—C. T. HAMMOND, M.B., B.S.(Qld.), D.P.R.M.(Syd.).

Senior Public Health Nurse: P. M. FARRELL, S.R.N., F.C.N.A.

Senior Social Worker: L. W. VAN DER EST, B.A., A.Ed., B.Soc.Wk.(Qld.).

The home care programme for the aged in Queensland, provided by Community Home Care Service and the Community Health Service Centres, has brought real help to the elderly people with health problems who are continuing to live in their own homes.

In the short span of less than two decades, a strategy of the Queensland Department of Health to deal with the recognised problem of care of the aged in their own homes has been so successful that it will be possible to incorporate the caring programme into the new community health services as a vital responsibility of the health service throughout Queensland.

The need for the specialist skills of the geriatric physician has only just commenced and it is now more necessary to train specialists in geriatric medicine to provide specialist geriatric services in hospital geriatric units at major hospitals throughout Queensland.

Skills accumulate and do not appear over-night. It can be stated that it is very necessary to train specialist physicians who will be responsible for providing the expert care of the elderly which will be required over the next ten to twenty years.

GENERAL

Doctor C. T. Hammond commenced duty as regional geriatrician, Townsville, on 14th February, 1977, and is providing specialist consultative services to the staff of the Community Health Service at Townsville, the Townsville General Hospital and to "Eventide", Charters Towers.

Doctor P. M. Miller commenced duty as sessional medical officer-in-charge, Community Home Care Service, Maryborough, on 19th July, 1976.

Doctor M. H. Tilse resigned as medical officer, Division of Geriatrics, Brisbane, on 10th December, 1976.

Doctor P. V. Brennan resigned as medical officer-in-charge, Community Home Care Service, East Brisbane, on 21st January, 1977.

Doctor R. J. Cargill commenced duty as medical officer-in-charge, Community Home Care Service, East Brisbane, on 31st January, 1977.

COMMUNITY HOME CARE SERVICE

Table CXII summarises the work of Community Home Care Service during its eighth year of operation.

4 220 persons were referred for help and were seen in their homes by the public health nurses, social workers and medical officers, so that their needs could be properly assessed.

1 328 persons were prescribed home help as part of the helping service and at the end of the financial year, 4 592 persons were being provided with a part-time home help service.

1 476 part-time home helps were employed to provide this valuable service to assist elderly people to continue to live in their own homes.

The table records the fact that home help was ceased for 670 persons, because there was no continuing need for part-time home help services.

TABLE CXII
COMMUNITY HOME CARE SERVICE, QUEENSLAND
(1st July, 1976, to 30th June, 1977)

	North Brisbane	South Brisbane	Too- woomba	Mary- borough	Hervey Bay	Howard	Bunda- berg	Gympie	Noosa Shire	Nam- bour	Maroo- chydore	Total
SOURCE OF REFERRAL—												
Self/Family	568	378	143	79	31	5	124	42	16	16	26	1 428
General Practitioner	269	231	62	35	16	2	29	28	17	16	29	734
Hospital	280	97	35	63	22	6	42	29	20	40	51	685
Social Worker	138	185	18	14	2	1	2	6	5	4	16	391
Community Services	203	156	19	4	12	4	23	12	10	7	6	456
Department of Health	67	45	22	2	1	..	7	..	1	3	2	150
Other	125	123	56	4	..	..	29	13	8	11	7	376
Total referred	1 650	1 215	355	201	84	18	256	130	77	97	137	4 220
ACTION TAKEN BY—												
Medical Officer	11	18	1	45	14	8	..	..	..	..	..	97
Public Health Nurse	1 363	1 054	355	185	72	11	255	78	19	27	54	3 473
Social Worker	266	255	118	17	10	4	5	57	59	77	90	958
HOME HELP—												
Number supplied	377	464	147	88	39	11	122	25	..	18	37	1 328
Home help pending	2	..	..	..	..	..	2	..	..	..	..	4
Total receiving home help	1 851	1 332	477	262	100	12	354	101	..	43	60	4 592
Number of hours worked	156 279	141 765	46 117	28 823	9 369	925	45 004	13 041	..	5 282	5 880	452 485
Number of Home Helps	572	405	117	107	31	3	157	42	..	19	23	1 476
CANCELLATION—												
Death	66	70	50	20	11	..	14	29	5	10	11	286
Convalescent Home	86	56	24	2	4	..	30	15	7	13	8	245
Hospitalisation	260	233	60	23	4	1	27	26	16	15	13	678
No continuing need	301	258	54	23	3	..	12	8	2	5	4	670
Alternative care arranged	39	150	2	15	4	..	3	1	2	..	..	216

PUBLIC HEALTH NURSES

There has been a slight alteration in the area being serviced by the Northside Regional Centre with the loss of a few suburbs to the Pine Rivers Community Health Services Centre, which began operation this year. This probably accounts in part for the slight fall in new referrals.

Staff members have remained unchanged this year. However, the Gympie based nurse resigned in October, 1976, and was replaced in February, 1977. A nurse was transferred from Northside Regional Centre to Gympie to maintain continuity of service for the period October to February.

A nurse from Southside Regional Centre was granted leave of absence from 14th February, 1977, to 16th December, 1977, to study for the Diploma in Community Health Nursing at the College of Nursing Australia in Melbourne. A relieving nurse has been employed during her absence. A casual nurse has been employed periodically at Northside Regional Centre during the year when relief has been required.

A decision to appoint one of the northside nurses to act as Centre liaison officer with the community has proved very beneficial both to staff and the community.

ROYAL BRISBANE HOSPITAL LIAISON SERVICE

The demand for this service has increased during the past twelve months. Involvement in educational sessions with health professionals has continued throughout the year both within the hospital and with community groups.

Briefly, the work involves planning for care and support in the community. This requires assessment of needs and assisting staff to identify people who will need continuity of care.

Total number of clients referred either to or from Royal Brisbane Hospital to community services—
Male—252; Female—458; Total—710.

PRINCESS ALEXANDRA HOSPITAL

Routine follow-up of people discharged from the Geriatric Unit of Princess Alexandra Hospital has continued. The aim is to facilitate the transition from hospital to home, and to assist the person to maintain the degree of independence attained in the Unit.

Friendly visiting and granny sitting services have been encouraged. All nurses have made themselves available to attend evening meetings concerned with activities for the ageing.

Meetings with the Blue Nursing and St. Luke's Nursing Services take place on a regular basis, and these have proved mutually beneficial.

SOCIAL WORK

Staff

Considerable strain was experienced by social workers in the two Community Home Care Centres in Brisbane during the year 1976-77 because of a depleted staff, but this situation was rectified when the four vacancies were filled in January this year.

The Division of Psychiatric Services allocated four cadet social work associates to the Division of Geriatrics, and for the first time one is working in the Nambour area under the supervision of the social worker with the Community Home Care Service. The former switchboard operator at the Southside Centre who had been involved in welfare work one day weekly, took up a cadetship in Social Welfare and was allocated to the Alcoholism and Drug Dependence Services.

The social worker who had worked one day weekly with the Community Home Care Service in Bundaberg resigned earlier this year and a full-time position has since been created.

A full-time position with the Community Home Care Service in Maryborough and an additional position at the Northside Centre in Brisbane was created.

Referrals

Table CXIII shows the total number of clients seen by the social workers and assistant social worker associates in the Community Home Care Centres and by the senior social worker and cadet social work associate at Headquarters; and Table CXIV shows the source of referrals of new clients to Community Home Care Centres and Headquarters.

TABLE CXIII
CLIENTS SEEN BY SOCIAL WORK SECTION

	Brisbane				Gympie- Maryborough- Nambour- South Burnett- Caloundra	Toowoomba	Grand Total
	Northside	Southside	Headquarters	Total			
Number of clients brought forward or re-opened from previous year	326	219	34	579	40	49	668
Number of new clients registered 1-7-76—30-6-77	658	565	38	1 261	392	121	1 774
TOTAL	984	784	72	1 840	432	170	2 442

TABLE CXIV
SOURCES OF REFERRAL OF NEW CLIENTS TO COMMUNITY HOME CARE CENTRES AND HEADQUARTERS

	Brisbane	Gympie/Maryborough Nambour/South Burnett Caloundra	Toowoomba
HEALTH DEPARTMENT including— Minister's Office, Director of Community Medicine, Community Health Nurses, Senior Social Worker, Division of Geriatrics, School Health, Psychiatric Services	627	36	32
Clients or Associates	326	72	30
General Practitioners	72	41	12
Hospitals	73	200	14
Other social agencies including Nursing Homes, Aged Persons' Homes, Domiciliary Services ..	102	19	14
Other Queensland Government Departments ..	16	2	4
Commonwealth Government Departments ..	35	22	6
Eventide, Sandgate	5	..	1
Local Authorities	5	..	2
Citizens' Advice Bureau .. .. .	..	..	6
TOTAL	1 261	392	121

It is significant that despite staff shortages and the transfer of some outer suburbs from the Northside Centre to the Pine Rivers Community Health Services Centre, the number of new referrals to the Community Home Care Centres in Brisbane has increased by 12 per cent.

The 29 per cent decrease in the number of new referrals to the Toowoomba Community Home Care Centre in the past year, indicates a return to normality after the abnormally high number of referrals in 1975-76 as a result of the hailstorm in January, 1976.

The work load of the social worker based in Gympie is extremely heavy, but the dramatic increase in the number of referrals has resulted from the allocation of an assistant social worker associate to the Nambour area. Fifty-one per cent of referrals came from hospitals in the area.

It should be noted that almost 50 per cent of the referrals to the social workers in the Brisbane Centres came from within the Health Department.

NATURE OF REFERRALS

Social Assessment and Support

The majority of referrals involved social assessment and support which indicates that the Community Home Care Service continued to provide a valuable preventive and rehabilitative service to elderly and disabled people in the community.

Social workers assessed applicants for admission to "Eventide", Sandgate, and to the Moreton Bay Nursing Care Unit, wherever possible, not only to establish priority of need, but also to define the type of care needed.

PLACEMENT AND ALTERNATIVE ACCOMMODATION

Approximately 33 per cent of referrals in the Brisbane area were concerned with admission to nursing homes, holiday placements, and accommodation in aged persons' homes, boarding houses or flats. Long waiting lists for admission to nursing homes and aged persons' homes, high nursing home fees, and lack of control over standards of care in boarding houses which cater for people needing some supervision, caused great concern.

The demand for holiday placements exceeded the number of beds available and "relief" beds for elderly people in the Marjorie Warren Geriatric Unit at the Princess Alexandra Hospital, were greatly appreciated by their caring relatives.

The consideration and co-operation of administration officers in the Health Department and of the staff at "Eventide", especially in arranging urgent admissions to "Eventide", were also appreciated.

DIVISION OF NURSING

Adviser-in-Nursing: Miss JOAN FOLEY, S.R.N., Dip.N.Admin., F.C.N.A.B.A.

Assistant-Adviser-in-Nursing: Miss ZSUZSANNA ZSEMBAY, S.R.N., Dip.N.Admin., F.C.N.A.

The past twelve months have been one of the most exciting periods in the history of nursing in Queensland. In mid-1976 the Minister for Health, the Honourable Dr L. R. Edwards, M.L.A., issued a White Paper on Nursing Education. This was received with great enthusiasm by the nursing community. A Working Party consisting of three senior registered nurses was set up by the Minister and they worked for a period of seventeen weeks in the Department of Health receiving submissions from nurses and nursing organizations. Nursing legislation from all Australian States was reviewed and guidelines for the legislation were set up. Members of the Working Party supported by officers of the Division of Nursing addressed groups of nurses from hospitals and Community Health Centres.

New legislation in the form of two separate Acts was introduced at the end of 1976 and the two new Acts, the *Nursing Act 1976* and the *Nursing Studies Act 1976*, were proclaimed on 16th December, 1976. The *Nursing Act 1976* sets up a new Nurses Registration Board of Queensland. The previous "*The Nurses Act of 1964*", was repealed. A Board of Nursing Studies will be set up by the Nursing Studies Act and will be responsible for all nursing education in Queensland regardless of where nurses are being educated. The Chairman will be a full-time officer and must be a nurse with suitable qualifications. The Chairman will be supported by full-time nursing and clerical staff.

In late April the Adviser-in-Nursing travelled overseas to interview applicants for the position of Chairman. Whilst there, the opportunity was taken to talk with Nursing Councils and the Board of Clinical Nursing Studies regarding the future of nursing in the countries visited and the possible effect these developments could have on nurses from Queensland registering in the United Kingdom.

Officers of the Division are involved to a great extent in advising inquirers on the requirements for all nursing programmes. Inquiries are received by telephone, letters and personal visits. Records kept for the month of October, 1976, showed that 512 telephone calls, 103 letters from country and interstate and 14 personal calls were received. In addition, a good rapport has been established with guidance officers in the various high schools and information leaflets and brochures on nursing are delivered on request.

Careers evenings on nursing are organized by the Division and the co-operation received from the various hospital schools of nursing is appreciated. In addition, talks at high schools are given on request and for the first time this year the University of Queensland Careers Seminar requested information and the Assistant-Adviser-in-Nursing attended an evening session and spoke to interested groups. Literature is supplied to country Nursing Superintendents who participate in career days in their own towns.

In addition to giving information to potential nursing students, letters are received from interstate and overseas nurses requesting details of post-basic courses and employment available in Queensland.

The officers in the Division participate in the interviewing and selection of registered nurses for positions in the Psychiatric Hospitals and Services, Division of Community Medicine, Community Home Care, School Health Services and other sections of the Department of Health. Applicants for nursing positions in the Aboriginal Health Programme are screened and interviews arranged for those applying from other States. The ready co-operation of nurse interviewers outside Queensland is appreciated.

The assessment of increases in staff establishment requested by Hospitals Boards constitutes a sizeable proportion of the Division's time. These assessments are made in conjunction with the Inspectorial Branch of the Department and where possible visits are made to hospitals in the metropolitan or near metropolitan area to discuss the requests personally with hospital staff.

Invitations are received to attend graduation ceremonies at hospitals and frequently to give the address. This is regarded as a pleasant task and it gives the officer of the Division the opportunity to speak with the newly graduated nurses.

Due to the pressure of work created by the setting up of the new legislation necessitating officers' presence in Brisbane, fewer routine visits were made to country hospitals than usual. Routine visits were made to the following:—

Hospitals

Augathella	Morven
Boonah	Mungindi
Charleville	Nambour
Chinchilla	Quilpie
Dirranbandi	Roma
Esk	St. George
Goondiwindi	Southport
Inglewood	Stanthorpe
Kilcoy	Tara
Laidley	Texas
Miles	Wallumbilla
Millmerran	Warwick
Mitchell	

Community Health Centres

Gatton	Ipswich
Inala	Redcliffe

Special visits were made to the following:—

Beaudesert Hospital	Moranbah Hospital
Bundaberg Hospital	Nambour Hospital
Caloundra Hospital	Oakey Hospital
Eventide Sandgate	Princess Alexandra Hospital
Gladstone Hospital	Redcliffe Hospital
Ipswich Hospital	Royal Brisbane Hospital
Lowson House, Royal Brisbane Hospital	Royal Children's Hospital
Mater Hospital Public	Southport Hospital
Mater Mothers' Hospital	Toowoomba Hospital
Maternal & Child Welfare, Rockhampton	Wynnum Nursing Home

Officers of the Division participate in departmental conferences and attend meetings of the Linen Standards Committee, Advisory Committee on Hospital Drugs and Surgical Appliances, Furniture and Equipment Committee, Mount Gravatt Building Committee, Department Building Committee.

A committee to advise on desirable developments in nursing was set up by the Board of Advanced Education with the concurrence of the Ministers for Health and Education and had wide representation of senior nurses. The Adviser-in-Nursing was a member of this Committee which was chaired by Dr P. G. Livingstone. This Committee deliberated for twelve months and the recommendations of the Committee were contained in the Livingstone Report. Subject to suitable finance being available it is expected that the post-basic courses currently being conducted at the College of Nursing Australia, Queensland Branch will be transferred to the School of Health Sciences at the Queensland Institute of Technology in 1978.

The Department of Health continues to grant leave on full salary to nurses employed in Hospitals and Departmental Services to attend full-time study courses at the College of Nursing Australia, Queensland Branch, and at the College of Nursing Australia, Melbourne. Thirty-seven scholarships were awarded in 1977 in the following areas of study:—

- Diploma in Nursing Administration;
- Diploma in Nursing Education;
- Diploma in Hospital Nursing and Unit Management.

In the last course electives were offered in areas of Medical/Surgical Nursing, Intensive care and also the Diploma in Community Health Nursing, Melbourne scholarship.

In 1976 thirty-four scholarshipholders were successful in obtaining diplomas. All these are now working in Departmental areas and in addition, six nurses who attended the College privately are working in Departmental areas.

A successful Nursing Superintendents' Conference was held again this year. Eighty-nine Nursing Superintendents from State Government Hospitals and Departments and sixteen from private institutions attended. The Honourable the Minister for Health, Dr L. R. Edwards, opened the conference and entertained the participants to afternoon tea. Later in the week the Minister addressed the conference and at the close of the conference received the resolutions from the conference executive. The Minister's interest in the conference was warmly received.

A survey has again been conducted of the wastage rate of students in training. There are now twenty-seven State hospitals conducting basic courses. An increasing number of

pupil nurses are now taking the twelve months course leading to the award of “enrolled nurse”. The term “aide” was deleted with the repeal of “*The Nurses Act of 1964.*” The title of “mental registered nurse” has been changed to “psychiatric registered nurse” and “child welfare nurse” now becomes “child health nurse”.

The recruitment of student nurses and pupil nurses is no longer a problem. Most hospitals have waiting lists and increasing numbers are presenting for training with much higher than the minimum education standard required by the Nurses Registration Board of Queensland.

The Adviser-in-Nursing is a member of the following committees which meet interstate:—

Committee on Overseas Professional Qualifications (Nursing Standing Committee);

National Health and Medical Research Council (Nursing Standing Committee);
Committee to advise Health Ministers’ Conference on all aspects of Nursing (Sub-Committee of H.A.S.A.C.);

Nurses Registration Boards Authorities Conference.
Inservice education for registered nurses has continued and participants in the programmes have expressed gratitude for this opportunity to upgrade their skills.
The employment situation in respect to registered nurses is similar to last year. There are still insufficient numbers of registered nurses with midwifery certificates for country hospitals. There are some areas in the country where single certificated nurses may have a problem obtaining a position. The three large metropolitan hospitals still have intermittent periods of minor shortages but these are not as great as previously.

TABLE CXV

Hospital	Student Nurses in Training 1-7-76			Students in Training 30-6-77			Students Commenced Training During Year	Students Re-entered Training During Year	Students Left Training During Year	Completed Training Time but not Exam- inations— Left	Students Graduated During Year
	1st	2nd	3rd	1st	2nd	3rd					
Atherton	10	4	7	12	9	3	13	..	3	..	7
Ayr	2	6	2	3	4	4	5	4	6	..	2
Bundaberg	32	14	15	30	19	15	44	..	29	..	10
Cairns	54	30	15	47	33	24	35	2	14	..	3
Charleville	2	1	1	5	1	4	4	5	1	2	1
Dalby	3	4	4	11	2	5	11	..	1	2	1
Gladstone	4	6	4	6	3	5	5	3	2	..	5
Goondiwindi	8	..	2	2	2	2	3	3	9	..	1
Gympie	23	19	11	27	19	17	27	3	9	..	1
Innisfail	12	4	2	10	8	6	13	7	12	1	1
Ingham	3	1	..	..	2	2	..	2	3	..	..
Ipswich	16	25	49	54	25	24	58	6	36	1	10
Kingaroy	3	..	..	1	..	..	..	..	1	..	..
Mackay	24	15	11	28	15	11	36	4	27	1	7
Mareeba	10	5	4	6	8	6	10	6	13	1	1
Maryborough	30	20	9	42	21	16	55	4	18	9	9
Mount Isa	13	14	6	16	12	9	28	3	24	..	4
Nambour	11	13	5	9	10	13	9	1	1	1	5
Princess Alexandra	278	175	166	251	263	193	287	2	123	77	95
Redcliffe	23	18	18	24	20	19	25	3	8	2	14
Rockhampton	70	46	35	69	56	39	75	4	38	1	27
Royal Brisbane	364	159	124	316	217	136	277	7	112	23	134
Southport	47	35	21	24	33	37	32	6	30	5	12
Stanthorpe	7	2	..	1	2	1	6	1	4	..	..
Toowoomba	65	46	33	53	50	37	68	3	39	8	25
Townsville	85	54	19	94	47	49	105	16	57	11	22
Warwick	13	10	9	13	7	10	13	..	7	..	8

DIVISION OF COMMUNITY MEDICINE

Director: M. CHEONG, M.B., B.S.(Qld.), M.R.C.P. (Edin.).

Medical Officers-in-Charge:

Cairns—G. H. ELLIS, M.B., B.S.(Qld.).

Gold Coast—G. G. MILLER, M.B., B.S.(Syd.), F.R.A.C.P., B.E.(Syd.).

Inala—I. WAUGH, M.B., B.S.(Qld.).

Ipswich—G. J. POWELL, M.B., B.S.(Qld.), M.R.C.P.(U.K.), M.R.A.C.P.

Mackay—C. M. EVANS, M.B., Ch.B.(St.And.).

Pine Rivers—J. R. TAYLOR, M.B., B.S.(Qld.), M.A.C.M.A., F.R.A.C.G.P.

Redcliffe—P. G. MITCHELL, M.B., B.S.(Qld.), D.P.M.(Qld.), M.A.N.Z.C.P.

Rockhampton—R. A. WILSON, M.B., B.S.(Syd.).

Townsville—D. M. MAHABIR, M.B., Ch.B.(Birm.), M.R.C.S.(Eng.), L.R.C.P.(Lond.), M.P.H.(John Hopkins).

Wynnum—T. SALE, O.B.E., M.B., Ch.B., F.R.C.S.(Edin.), F.R.A.C.S., F.A.C.M.A.

Senior Social Worker—E. P. DOBBYN, B.Soc.Wk.(Qld.).

Principal Community Health Nurse—G. MCCHESENEY-CLARK, S.R.N., Dip. Public Health Nursing, F.C.N.A.

Consolidation and achievement describes the activities of the Community Health Service in Queensland in the year under review.

Centres are now operating at the following cities and towns: Cairns, Herberton, Townsville, Charters Towers, Mackay, Rockhampton, Yeppoon, Mount Morgan, Gladstone, Ipswich, Gatton, Gold Coast, Redcliffe, Pine Rivers, Inala, Woodridge, Wynnum, Cannon Hill, Mount Isa, Slacks Creek, and Coolangatta.

Financial restrictions prevented any expansion of the services to other areas of the State during the year.

It was possible to allocate funds from within the Programme to undertake major modifications and repairs to existing centres and, in some areas, to purchase additional accommodation, as follows:—

MACKAY CENTRE: Modifications to existing centre and purchase of property at North Mackay for use as an Activity Centre;

WOODRIDGE CENTRE: Additional accommodation to include accommodation for Maternal and Child Health and modifications to existing accommodation;

REDCLIFFE CENTRE: Purchase of old City Council Chambers for conversion to accommodate Community Health Services Centre;

COOLANGATTA CENTRE: Modifications to existing centre;

CAIRNS CENTRE: Modifications to existing centre;

CHARTERS TOWERS CENTRE: Modifications to existing centre;

TOWNSVILLE CENTRE: Modifications to Activity Centre situated at Rosslea.

The major achievement within the Division during the year was the completion of the complex at Wirraway Parade, Inala at a cost of \$2.3 million.

This building, in addition to the Community Health Services Centre, provides a primary medical care service and accommodates teams from Dental Services, Maternal and Child Health, University of Queensland, Commonwealth Acoustic Laboratory and Department of Children's Services.

HOME HELP

The home help service remains a very important part of the integrated community health service in Queensland. It has been clearly demonstrated that prescribed home help, as part of a supportive health care prescription is an invaluable help to many elderly and disabled people who may have had to make an alternative decision about their care if home help was not provided.

At the end of June, 1977, two thousand eight hundred and sixty-seven clients were in receipt of home help prescribed by the Community Health Centres in Queensland.

Twenty-three thousand eight hundred and seventy-one hours of home help were provided in the month of June by a total of seven hundred and forty-eight part time home helps.

An average of eight hours per client per month of home help gives some indication of the type of assistance being given, where the remainder of the caring prescription is to encourage self help and other relevant help such as home nursing, meals-on-wheels and helping visits by family, volunteers or our professional staff.

SOCIAL WORK REPORT

The present social work staff of the Division numbers thirty-one (31) and all centres, with the exception of Mount Isa, receive a social work service either full-time or on a sessional basis. The interest shown by new graduates in working in the field of community health was maintained this year and numerous applications for employment were received both from Queensland and interstate.

Apart from the first senior appointment outside the metropolitan area which was approved for the Gold Coast last year, a senior has now been appointed at the Rockhampton centre. Although the overall responsibility for social work staff in the Division rests with the senior social worker at Headquarters these senior appointments have meant a much more satisfactory work allocation and supervision of staff at a regional level.

Many smaller centres are unlikely to have locally based staff for some time yet and the development of staff from a regional centre, does mean that at least a part-time service can be offered and support given to the local public health nurse. Thus Mount Morgan, Yeppoon, Charters Towers and Gatton are served in this way.

All visits to smaller centres are made with other staff members including the medical officer, psychologist, therapist, the organiser of home help or a health aide and these visits help to strengthen the team approach to a client's problem, an aspect which is difficult to achieve with a small number of isolated staff.

The primary responsibility of the social workers is to use their specific training in providing a skilled casework service to those clients whose physical or mental ill-health is affected by social or emotional problems. There is emphasis on the preventive aspect of public health, in identifying those factors which may cause social breakdown, but also in maintaining clients who present in a crisis situation or need a long term supportive, counselling relationship.

Centre staff are involved with clients with a wide range of health related problems, from the frail aged and the mentally or physically handicapped to the deserted wives, the one parent families, the isolated or depressed housewives or the families of alcoholics.

Social workers, however, have indicated an increasing number of referrals in two widely differing areas, namely—those concerning ex-psychiatric and rehabilitation patients and those concerning the young children, particularly of pre-school age.

Help in terms of community based health education, therapeutic or socialising groups, particularly when integrated with the services of the other Divisions of the Department of Health or Government Departments, can be a significant factor in maintaining the health of young families. Other Divisions of the Department of Health, such as School Health Services, which do not employ social workers, are given a service in those areas covered by our centres.

All cases notified by the Laboratory of Microbiology and Pathology as the result of "Cot Deaths" or Sudden Infant Death Syndrome, have for many years been referred to Departmental social workers for follow-up. This service which has been continued by this Division in the metropolitan and adjacent areas has now been extended to all centres throughout the State.

During the past year there has been an increasing community demand for consultation and education in either initiating or maintaining a very wide variety of groups relating to all ages and many types of disability or problem areas. Their diversity highlights the fact that centres are receiving the type of referral which helps to identify those needs specific to different localities. In company with other staff, including health education officers, social workers are involved with groups related to, for example, geriatric day care, school leavers, single mothers, play therapy and parentcraft, drug

and alcohol addiction, hostel and sheltered workshop activities for young handicapped adults or ex-psychiatric patients and arts and crafts centres.

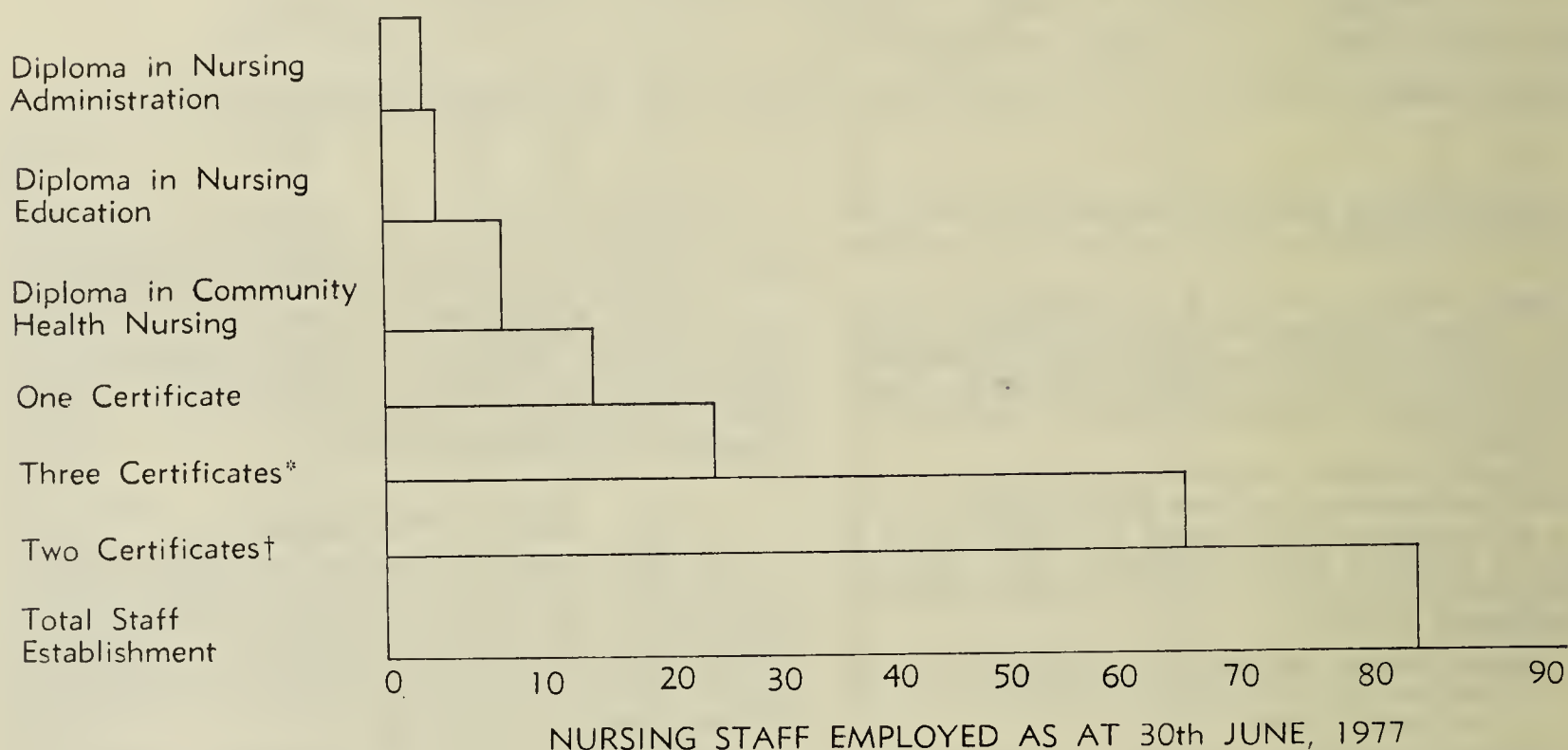
In most centres, there has been an emphasis on the training of volunteer groups, most of whose members are now giving a service as friendly visitors to the aged or isolated or as support persons to centre staff in their client contacts. Social workers are also involved with other staff in areas of training at an in-service level for new staff, both professional and clerical, in courses for home help and health aides and for students of all disciplines who visit the centre.

An important contribution to professional education is provided by the supervised student placements of students from Queensland and James Cook Universities and from North Brisbane College of Advanced Education, while at two centres a supervised full time training experience is given to cadets from Kangaroo Point Social Welfare Course.

COMMUNITY HEALTH NURSES REPORT

The principal community health nurse has visited all the centres during the year. Country centre visiting has been limited to two or three day visits only and a shorter visit to interview applicants for the necessary appointments.

A recent survey shows the nursing staff of the Division as a group of highly qualified nurses.



* General Certificate, Midwifery Certificate, Maternal and Child Health or Psychiatric Nursing Certificate.

† General Certificate and Midwifery or Psychiatric Nursing Certificate.

In any centre which has a staff establishment of two or more community health nurses, one or more nurses holds a certificate in Maternal and Child Health.

Staff appointments have been made at the following centres: Townsville—3, Charters Towers—1, Inala—2, Ipswich—1, Mount Morgan—1, Redcliffe—1, and Woodridge—3.

With the appointment of a nurse educator who plans to commence duty in August, all nursing staff positions were filled on June 30th, 1977.

The sixth orientation programme of fourteen (14) weeks commenced May 9th, 1977, with fifteen (15) nurses participating. As in previous years a community health nurse has been seconded from one of the centres to Headquarters to co-ordinate the orientation programme. At short notice, the co-ordinator has willingly taken this position and successfully and efficiently organised the programme.

Increased involvement with student nurse education and College of Nursing students has developed throughout the year. Lectures have been given at Princess Alexandra Hospital, Mater Hospital, and in the country at Cairns, Townsville and Rockhampton Hospitals. Visits to the Community Health Centres of a half or one day have been undertaken by students from these hospitals.

Continuing professional education has been recognised by all nursing staff. Metropolitan and near metropolitan centre nursing staff have attended monthly study days strengthening and developing skills and knowledge in community nursing practice and current medical trends. Many nurses have participated in a number of seminars and conferences in

the pediatric, geriatric, community health and psychiatric area and three nurses officially attended a community health nursing conference in Sydney in September, 1976. In the country areas nurses have been involved in continuing education in-service programmes at the centre level.

Whilst case work has continued to take up much of community health nurses' time, nurses have continued to be involved in a great variety of community activities. New projects have commenced where there is a need. An awareness of areas unmet has been recognised and facilitation of appropriate action to meet the needs has been made. Activity and socialisation programmes for "shut ins" and "disabled groups" have commenced. Isolated mothers, wives of handicapped clients, epilepsy, adolescent, arts and crafts, slimmers and stoma groups have been formed with nurses participating.

Community health nurses have continued to participate in the Enterostomal Therapy courses held at Princess Alexandra Hospital this year. Stomal therapists work in the community at the Townsville, Redcliffe and Gold Coast centres. Each acts in a consultative advisory capacity meeting the needs of the stoma clients in that particular community.

Hospital liaison commenced with the Mater Hospital and the Inala centre has been functioning smoothly. Planning for this service to expand with a full time liaison sister operating to all Community Services Centres is well under way. Design of suitable functional referral forms has been made. Nurses look forward to this exciting expansion of hospital/community liaison.

Space does not allow for a description of each centre's activity. The following is an outline of some of the activities of the Gold Coast centre which gives some indication of the wide range of involvement the centre has in health related community activities.

The major work load of staff of the Gold Coast centre involves working with clients on an individual basis. Four case conferences have been held each week and these conferences relate to the Division of the Coast into four sections. The Coolangatta centre has been renovated and recommenced operations in October, 1976. The Labrador centre was purchased and commenced its first programme on 28th September, 1976. Both centres are providing the following groups: Karakan Hostel Meetings, Four Playgroups, Stomal Therapy Groups, Day Groups for the disabled and socially isolated, Yoga Classes, Cooking Classes and Physiotherapy and Occupational Therapy Groups.

The physiotherapists and the recently appointed occupational therapist as well as the speech therapist have been involved in rehabilitation activities at both Activity Centres.

Therapists have been involved generally in the community with clients and assisting other organisations to function more efficiently.

The community health nurses, psychologists, social workers, health education officer and other staff continue to be involved in many activities on the Gold Coast with

other organisations and groups in an advisory and educational capacity. The following educative activities are specially noted:—

1. Coronary Heart Disease Awareness Campaign during which staff members combined to provide an educative role and assessment of blood pressure as a risk factor for the community.

2. A Parent Education Programme over a twelve week period involved many members of the centre and outside professional help. This was very successful and it is intended to repeat it on a regular basis, probably twice yearly. The health education officer continues to function very actively in the community, running numerous programmes and speaking to many groups. He is undoubtedly a major factor in increasing awareness of the community regarding the Community Health Centre and its functions. Hospital liaison continued to function effectively at both Tweed Heads Community Hospital and Southport General Hospital. The stomal therapist has provided services to the community as well as the hospitals in the area ranging from Labrador to Murwillumbah. The centre has continued to be involved in the training of students—Social Work and Psychology.

During the year under review 6 549 new cases were referred to the Community Health Service throughout Queensland.

4 480 new cases were referred to the Community Health Nurses.

2 069 new cases were referred to Social Workers.

DIVISION OF HEALTH EDUCATION

The Division of Health Education came into being on 30th October, 1976, in pursuance of the provisions of section 3 and 25 of the *Health Act Amendment Act 1975* which dissolves the former Queensland Health Education Council.

Hence, this report covers the last four months of activity of the former autonomous Council and the first eight months of the new Division.

The change-over provided an opportunity to review the position of health education in Queensland. It was determined to develop the new Division to a very high standard of professional competence, and to build in the best features of health education from around the world.

As a result of this decision, the Division relies on health education specialists to provide expertise and to undertake activities for which other health personnel are not specifically trained.

The Division also recognises the role of all health personnel in health education and the importance of co-operation between the health education specialists, the other health professionals and the education system.

The health educators act to strengthen and co-ordinate the total delivery of health education services, as well as to undertake the major and more difficult programmes.

To improve the health status of all Queenslanders through education, the following functions need to be performed by the new Division:—

- The dissemination of accurate health information to the public;
- The implementation of health education programmes designed to result in environmental and behavioural changes;
- Training of health personnel to strengthen their potential for health education;
- Researching the education aspects of public health problems, and evaluating health education activities.

STAFFING

The Chief Officer, Mr J. E. Holliday, retired on 10th May, 1977. He joined the former Queensland Health Education Council as Chief Officer in 1948. He was well-known nationally and internationally.

Dr D. A. Smith was appointed Medical Officer to the Division pending the finalization of staff re-structuring and during his absence on annual leave, Dr D. Kelly assumed this responsibility. Since the retirement of Mr J. E. Holliday, Senior Health Education Officer, Mr P. R. Hindson has been acting as Chief Officer.

During the year, the Community Health Education Officers attached to the Community Health Services Centres at Townsville, Rockhampton, Ipswich and the Gold Coast were brought under the administrative control of those Centres, while retaining their professional links with the Division.

NATIONAL AND INTERNATIONAL PARTICIPATION

Mrs A. Voloschenko and Mr P. R. Hindson delivered papers at the 1X International Conference on Health Education in Ottawa in August, 1976, and Mr J. Hatch and Mr P. Hindson presented papers at the XI National Biennial Conference of the Australian Council for Health, Physical Education and Recreation in Brisbane in January, 1977.

HEALTH INFORMATION SERVICES

The Division disseminates accurate and up-to-date health information to the public throughout Queensland. This includes the use of the mass media (press, radio and television), publications, films, displays and promotions, talks to groups supported by films and other material, and library services.

All information disseminated is supplied or checked by departmental experts or by departmentally-approved authorities.

Editorial and Public Relations

This section is responsible for providing the media and the public at large with accurate information on health. It plays an important role in planning and executing the "awareness campaigns" which form a vital part in health education programmes.

The awareness campaigns draw on the co-operation of the media. Very successful competitions held in conjunction with our major health programmes have been conducted by local television.

Other activities include the planning and production of Health News—a current-affairs type radio interview—used extensively by radio stations throughout the State; the provision of regular medical reports to the media; spot announcements on health matters for radio and television; writing pamphlets and booklets which for the first time include the "How to live with" series (completed so far are Coeliac Disease, Cystic Fibrosis and Stoma).

Publications

The demand for publications continues to remain high. Publications comprise: pamphlets—number of titles available 109; periodicals—"Wee care", "Answers", "A.H.E.P. Newsletters" and "Drug Education Newsletter"; new booklets and manuals—Treatment of Sexually Transmitted Diseases; How to Live With—Coeliac Disease, Cystic Fibrosis and Stoma and the Smoking Education Manual. There were 115 requests from Inter-State for materials and 22 from Overseas.

Film Library and Screening Service

Apart from supporting the Division's own programmes, this section, through community response, has become a resource centre for films and other visual aids. Among borrowers were hospitals, particularly country hospitals, ambulance and other community organisations.

New purchases of films and film strips were made to keep the service up-to-date.

Number of films loaned in 1976-77 was 11 683, compared to 9 704 in 1975-76. An average of 224 films were loaned each week. In 1975-76 the figure was 186.

No. of Borrowers	No. of Films
932 hospitals	2 518
411 Q.A.T.B.	515
1 941 schools, kindergartens, colleges of advanced education	5 241
1 104 general	2 841
200 Aboriginal Health Education Project	568
Total No. of borrowers ..	4 588
Overall audience	802 561

Special screenings covered Cancer in Women, Child Birth, Sex Education, Dental Health, Child Safety and Child Psychology, etc.

Displays and Promotions

Community interest is generated through displays and promotions. Some of these are held annually and others when the need arises.

ANNUAL

R.N.A. Exhibition, Brisbane: The 1976 theme was BE HEALTHY with two main focal points—the pamphlet distribution counter and a mock-up kitchen. Talks on food hygiene, storage and nutrition were given in the kitchen set-up. Talks also were given on the prevention and treatment of burns and the prevention of electrical accidents in the kitchen. Slides of nutrition, films and T.V. shorts on dental health were also shown.

Health Week: The theme was KEEP YOUR TEETH. The result of a poster and slogan competition showed a keen awareness of dental health.

Telegraph Home Show: The Division's display was on the health services available from the Health Department, the Division of Health Education and local authorities.

A display on plants which are poisonous to people and found in suburban gardens drew tremendous response. These special displays created considerable interest and resulted in the distribution of relevant information.

Country Shows: Because of their great attraction in Brisbane, the same displays now are on the country circuit.

Displays were provided for the following agricultural shows in association with local councils: Townsville, Cairns, Toowoomba, Maryborough, Rockhampton, Mackay and Warwick.

OCCASIONAL

Displays were provided at Bundaberg Sugar Festival, Ipswich City Council, Brisbane City Council and a number of functions organised by voluntary organisations interested in health.

Library Section

The reference section was expanded and kept up-to-date. Library services can be summarized as:

- (1) Monographs (books, booklets, reports) catalogued and classified—1,882; Number of new books added in 1976-77—504;
- (2) Current periodicals and government Department Reports (some abstracted)—275;
- (3) Medlars searches: these have been expanded to include information bulletins from macroprofiles on a range of subjects of interest to staff: alcoholism, drugs, venereal diseases, oral hygiene, nutrition, diabetes, social psychology;
- (4) Lending service to staff and regional offices;
- (5) Circulation of periodicals to regional offices.

HEALTH EDUCATION PROGRAMME

Health education programmes are distinct from the provision of information. While the information programmes are concerned with what people know and think about health, the education programmes are concerned with what people actually do about their health. The health education programmes are aimed, therefore, with closing the gap between what is known and what is actually practised in relation to health. This involves assisting groups of people to make the behavioural and environmental changes necessary for the maintenance of their good health.

By involving Queenslanders in health education programmes, they can be encouraged and assisted to take greater responsibility for their own health.

The Nutrition Programme is aimed at assisting school tuckshops to provide more nutritious foods. This is a continuing programme and the final evaluation will not be available for several years. However, indications are that 33 tuckshops involved in the programme in 1976-77 have all made at least some beneficial changes.

The Holiday Safety Programme. The 1976 campaign attempted to reach all people on holiday in Queensland, to help them have a healthier, accident-free holiday. Upon publication of the 1976 accident figures, the achievement of this campaign is reducing the level of Christmas holiday fatalities, injury and sickness in comparison with recent years will be evaluated. During this campaign, support was obtained from local government authorities, caravan parks, all members of State Parliament, and numerous organisations that come in contact with people on holiday. Health educators made personal contact with caravan park owners at the Gold and Sunshine coasts, Hervey Bay, Rockhampton and Townsville. Outdoor evening screening of safety films at holiday resorts proved very popular.

Smoking Education. Teachers' kits for use in primary and secondary schools have now been completed and will be distributed to all State and private schools. This kit will provide a comprehensive method of smoking education until the Research and Curriculum Branch of the Education Department completes its programme.

The pamphlet entitled "Cigarettes and Pregnancy" has been published as a result of numerous enquiries from maternity hospitals and private obstetricians and gynaecologists. Hopefully, this pamphlet will create awareness among pregnant women which may lead to their giving up smoking or cutting down on smoking.

The North Brisbane Teachers College had a smoking education programme dealing with the psychology of smoking and the adolescent problem in this area.

Smoking education programmes have been carried out at primary schools when requested.

Technical Colleges. A continuing series of programmes for first-year apprentices on block release was offered to all metropolitan technical colleges. Seminars for technical college instructors were held in association with apprenticeship programmes.

Seven Hills and Kangaroo Point Technical Colleges. Health and Human Relations Programmes were carried out at the request of the senior education officers of the Technical Colleges. Some of these courses were on social skills, contraception, V.D., drugs, alcohol and smoking. The programmes have stimulated favourable responses from teaching staff and students.

School camps. Two weekend camps were conducted for metropolitan secondary schools. Regional camps were conducted at Cairns and Townsville. Participation in the initial camp for primary schools was by invitation and response was encouraging.

Nursing education. The Nursing Education Programme is being expanded to provide a component of social and preventive medicine for student nurses, trained staff undertaking in-service training, or enrolled in courses at the College of Nursing. In-service training in health education techniques is being provided for Community Health Nurses and Community Care Nurses.

Army Programmes. Special programmes were held for Army and Air Force units, e.g. Army Aviation Regiment, Oakey; Signals Regiment, Karbalah; 6/9 Battalion, Enoggera; R.A.A.F., Amberley; etc.

Police Academy/Police College. The Division continues to provide lectures for the Police Academy on a regular basis.

Malaria control—Torres Strait. Two officers conducted a malaria control education programme in the eastern group of the Torres Strait Islands. The Programme arose out of reported resistance to mosquito spraying in the previous year, when only 73 per cent of the buildings on Murray Island were sprayed.

As a result of the programme, all buildings except one were sprayed during the 1976 spray-round. The officers also assisted the spray team on Darnley, Stephen and Yorke Islands.

An evaluation was carried out on the effectiveness of the malaria education programme on Murray Island, run in conjunction with the 1976 spray-round.

The results were:

1975—

Total buildings	..	..	69
Total sprayed	..	..	51
Unsprayed	..	..	18

1976—

Total buildings	..	..	71
Total sprayed	..	..	70
Unsprayed	..	..	1 (1.4%)

Alcohol. Alcohol education of Aborigines and Torres Strait Islanders is an on-going programme aimed at increasing the individual's awareness of the dangers of alcohol, and bringing about a reduction in alcohol use and abuse. Regular discussions are conducted in Brisbane, at hostels and parks, and in other areas of Queensland. Training of people working in the field of Aboriginal health is an important aspect of the programme.

Primary friendship groups. Regular contact is made with Aboriginal and Islander residents of Brisbane, and community structure files are maintained. An important aspect of this on-going programme is referral to health bodies, discussion of health problems and occasional workshops. About 100 homes are visited regularly.

Hostels programme. Regular film screenings and discussions are held at 19 hostels in Brisbane. Subjects covered are those suggested by the Hostel residents. A new and important area is that of health education for children at Wacol Hostel.

Nutrition. A two-day nutrition workshop was conducted at Woodridge, involving 25 people. The workshop included cooking demonstrations, and the provision of information on nutrition. The emphasis of the workshop was on nutritious food for children, especially for school lunches. Evaluation of the programme was carried out by examining children's lunches at a later date.

Dental. A dental programme was conducted with children at the Joyce Wilding Home. A play script was prepared, which the children learned. Props and costumes were prepared by the children, and the production was video-taped for play-back and discussion.

Venereal Disease—pilot programme. Following research into the knowledge, beliefs and practices relating to venereal disease in a number of centres, a pilot programme was conducted.

Preliminary analysis of the data obtained through the evaluation procedures has indicated marked success in some aspects, and opened the door for programme changes in others.

TRAINING

The need for training health personnel in health education is world-wide. This challenge is being met in Queensland in two ways—

- (1) The continuing education of the Division's full-time health education officers; and
- (2) the provision of training programmes in health education for other categories of health personnel employed by the Health Department and selected organisations.

Of the Division's staff, one member completed his M.P.H. in Health Education at the University of California's School of Public Health at Berkeley, U.S.A. He is believed to be the first in Queensland to obtain this qualification in public health education. Staff members are currently enrolled in appropriate university courses. An annual two-week in-service training course was held and attended by all the Division's Health Education staff.

Training courses were held for dental therapists, dieticians, nutritionists, community health nurses, Aboriginal health education assistants, teachers, police cadets, teacher trainees, nurses, and pharmacists.

Seminars for General Practitioners are being developed in conjunction with the Queensland branch of the Family Medicine Programme; and for 5th Year Medical Students in the Department of Social and Preventive Medicine.

A two-day workshop was conducted for Aboriginal health education assistants in the Brisbane area. Arising out of this, a series of first aid workshops will be carried out next year. Staff participated in the training of managers of Aboriginal Hostels Limited. Training sessions were also held for the "Students Initiatives in Community Health".

RESEARCH AND EVALUATION ACTIVITIES

Research is an essential feature of successful health education. Each programme requires research into the present practices of the people with respect to specific health problems,

as well as research into attitudes, beliefs, values and knowledge. The reasons for present practices and beliefs must be ascertained, as well as the strength of these beliefs and the importance of present practices in daily life. Research is also conducted into the most appropriate environmental and behavioural adjustments for the groups at risk.

Research for new programmes included Sun and Skin, Home Safety, Cancer in Women, Nutrition, Venereal Disease, and needs assessments of community groups requiring health education programmes.

Evaluation research of on-going programmes included Tuckshops, Malaria Control, Drug Education in Technical Colleges, Health and Human Relations in Commercial Colleges, seminars for medical students and secondary school students drug camps.

COMMUNITY HEALTH EDUCATION OFFICERS

Community Health Education Officers are responsible for the delivery of health education services in their own regions. They do this by working through established community groups and schools on health problems relevant to the local area. They also assist with programmes emanating from the Division of Health Education. Besides the dissemination of information through the media, publications, talks, films and local education programmes have included: Parent Education, Obesity, Coronary Heart Disease Awareness, Hygiene in Hair-Dressing, First Aid, Approaches to Sex Education for Parents of Pre-school Children, Stop Smoking Clinics, Nursing Education, Health Care Week (Ipswich), Marine Stingers, and Water Safety. Community Health Education Officers have also assisted in the conduct of various seminars.

These officers also have co-operated with the Division in such programmes as: Holiday Safety, Drug Education, Aboriginal Health Education, Health and Human Relationships, Country Shows, Health Week, Food Handling and Nutrition.

OCCUPATIONAL THERAPY

Adviser in Occupational Therapy: Miss R. M. READ, B.Occ.Thy.(Qld.)

Cursory examination of the period under review, gives the impression that there has been little change in either the development or provision of Occupational Therapy services in Queensland over the past twelve months. The previously reported wave of expansion appears to have waned and a period of consolidation set in. Vacant positions in problem areas continued to be unfilled.

However, as the financial year has drawn to a close, almost forty potential therapists, expecting to graduate shortly, began to apply for positions thus setting the stage for a very different scene in 1977-78.

Areas of long standing shortage, such as within the Division of Psychiatric Services, expect to see full, or almost full complements in the future. It should then be possible to adequately demonstrate the effectiveness of occupational therapy intervention in the larger psychiatric institution.

Staffing of Occupational Therapy Departments in major provincial hospitals has been maintained at a reasonable level. This stability, combined with the introduction of the semester system at the University of Queensland has led to consideration being given to placing selected students in provincial hospitals for clinical experience. It is hoped this will ensure a flow of future graduates to country areas.

The position at Maryborough Hospital has remained unfilled and this is limiting the scope of services available to the newly established Geriatric Day Hospital. The Department at Mackay Hospital has completed its first twelve months of operation and a part-time Occupational Therapist has been retained at Warwick where volunteers assist with activity programmes for chronic long stay patients. Combined professional Occupational Therapy and Social Work guidance has proved effective in establishing a successful programme manned by volunteers.

Within the Division of Community Medicine, Occupational Therapy staff establishments were cut and several of the remaining positions were not filled due to lack of applicants. Services provided by the initial appointees have had to lapse following their departure.

This is particularly unfortunate in the early developmental stages of Community Health Services Centres.

The inaugural meeting of the Australian Council for Rehabilitation of Disabled National Committee on Display and Information Services for the handicapped was held in Melbourne in March. The Adviser was fortunate in

being able to attend as there are moves to establish these services in most States and an overall view of early developments is of great assistance.

The Adviser also attended the New Zealand Association of Occupational Therapists National Conference in Christchurch. Following the Conference a number of centres and services mainly in the North Island were visited. These included purpose built Rehabilitation Units at Christchurch and Palmerston North Hospitals. Information gained on the operation of these Units can be incorporated in future planning.

Of interest, were the New Zealand Rehabilitation Aids Display Centre and the New Zealand Aids and Appliances Unit where research into and development of equipment for special needs is undertaken.

An innovative work assessment programme with very economical use of staff and facilities is in operation at Tauranga Hospital in the Bay of Plenty.

New Zealand is one of the few countries where the Department of Health has had a position for an Advisory Occupational Therapist for many years. Consultation with colleagues in similar planning and administrative positions is of great value in developing a realistic perspective at a local level.

Liaison has been maintained with the Department of Occupational Therapy, University of Queensland. The adviser is a member of the Advisory Committee to the Department and represents the Queensland Association of Occupational Therapists on the Board of the Faculty of Medicine. There is contact, particularly with later year students through participation in seminars and discussions relating to provision of health services and availability of employment.

A limited number of Scholarships are offered by the Department of the Public Service Board to students undertaking the Bachelor Degree Course in Occupational Therapy. These should ensure adequate staffing, particularly in less popular locations in the future.

The Adviser included in her duties visits to hospitals, Departmental institutions and health centres. She attended several conferences and participated in seminars both interstate and New Zealand. Contact was continued with the University of Queensland and voluntary organizations interested in occupational therapy.

PHARMACY

Adviser in Pharmacy: Mr. F. RYAN, Ph.C., M.P.S., F.S.H.P., A.A.I.M.

INTRODUCTION

Traditionally the role of the pharmacist has been that of a supplier of pharmaceuticals and a dispenser of prescriptions. However, the nature and potency of modern drugs have imposed greater responsibilities upon the pharmacist thereby making his position today as a member of the health-care team considerably more significant.

The education of pharmacists and the ethical standards of practice of the profession are designed to ensure utmost safety for the public in regard to the preparation and supply of drugs and medications. Accordingly, the pharmacist is being called upon to exercise a greater degree of instruction to patients and to monitor drug usage in the community because of his expertise in drugs and drug therapy.

The hospital pharmacist is becoming increasingly involved in the total care of patients. With the development of ward pharmacy services in hospitals, the pharmacist is actively participating in patient-care at ward level. This is improving the quality and efficiency of the service provided and is establishing a nucleus of pharmacists with valuable clinical experience.

QUEENSLAND PHARMACY SERVICES

The survey of pharmacy services in State hospitals has continued and further visits have been made to hospitals throughout Queensland.

The country hospitals visited during the year were: Gympie, Nambour, Southport, Kingaroy, Toowoomba, Redcliffe, Ipswich, Mackay, Rockhampton, Roma, Dalby, Warwick, Bowen, Collinsville, Proserpine, Sarina, Boonah, Beaudesert, Miles, Oakey, Wallumbilla, Gatton, Yeppoon, Murgon, Cherbourg and Wondai.

The survey is being undertaken in order to ascertain the range of pharmacy services currently being supplied within the State hospital system. It is also being carried out with a view to establishing present needs in country areas in order to facilitate the future planning of pharmacy services.

As a result of these visits, pilot projects have been introduced into certain areas of the State with regional-type pharmacy services being put into operation on a trial basis.

These are based in centres such as Cairns, Kingaroy, Nambour and Roma. Other projects are at present under investigation in Rockhampton, Mackay, Charleville, Toowoomba, Ipswich and Bowen. A metropolitan teaching hospital, Princess Alexandra Hospital, is also supplying a visiting pharmacy service to Beaudesert and to suburban centres. Services of this type will be particularly valuable in the more isolated areas of the State. The aim of the scheme is to provide a pharmacy supervisory service and with it improved drug control in hospitals throughout the State of Queensland.

FURTHER DEVELOPMENT OF SPECIAL SERVICES

The Relieving Pharmacist scheme for country hospitals was a most successful venture. Those pharmacists employed in State hospitals in country centres who availed themselves of the service, spoke highly of it and expressed their enthusiasm for its continuance.

Approval was given for the scheme to operate again throughout 1977. The current itinerary for the Relieving Pharmacist (Country Hospitals), Mr W. Blee, is covering the following centres: Toowoomba, Bundaberg, Gympie, Mackay, Townsville, Maryborough and Gladstone.

Ward pharmacy services are being gradually phased into State hospitals and some are already operating on a limited basis. Several hospitals are undertaking the preparatory work necessary for the introduction of imprest systems and ward pharmacy services. Staff are being appointed for the implementation and operation of these new services.

The basis of these services is to extend the activities of the pharmacist into the ward area to provide greater clinical involvement. They will also greatly improve the drug distribution and drug control systems in State hospitals. Considerable economic advantages in savings in drug usage have already been demonstrated in those hospitals where these schemes have been introduced as pilot projects.

The appointment of the pharmacist at the Inala Community Health Centre continued on a part-time basis until May, 1977. The new centre was then commissioned and a pharmacist has been appointed as a full time member of the Health Centre staff.

PHARMACY STAFF, EQUIPMENT AND PLANNING

New positions were created for pharmacists in country and metropolitan hospitals during the year. The country appointments were at Nambour, Roma, Charleville, Gladstone and Rockhampton. These additions to staff establishments are allowing existing services within the hospital to be extended and visiting pharmacy services to outlying hospitals to be introduced.

Placement of pharmacy graduate trainees from the University of Queensland in hospital pharmacy departments was also carried out. This training is a statutory requirement for graduates in order to be eligible for registration as a pharmacist.

Visits were made to hospitals and to distributors of hospital and laboratory equipment in order to establish specifications for items requested for use in pharmacy departments. This included refrigeration, air-conditioning, storage, distillation, packaging, sterile dispensing and laboratory equipment.

Discussions took place with hospital pharmacists and management regarding extensions and alterations to pharmacy departments. The use of new drug distribution systems was taken into consideration during these meetings as was the need for increased security in all areas where drugs are stored.

DRUG PURCHASING FOR STATE HOSPITALS

As a consultant to the State Stores Board, the Adviser in Pharmacy has continued to advise on the selection of drugs and pharmaceuticals for use in State hospitals and institutions.

This has involved investigating the source of supply of raw materials, quality control procedures, packaging facilities, and data relative to the pharmacokinetics of various drugs.

Visits were made to local pharmaceutical plants together with an inspector from the National Biological Standards Laboratory, Canberra, in order to study their rate of compliance with the Code of Good Manufacturing Practice.

Discussions were held with pharmaceutical manufacturers regarding the specific requirements for drug packaging for Queensland hospitals. Many advances are being made in this area as a result of these discussions.

The storage of pharmaceutical items has been closely studied and recommendations have been made for improving storage conditions in a number of hospitals. This particularly relates to those hospitals where drugs are exposed to temperatures in excess of the official recommended levels.

A standard manual stock control system for drugs has been proposed for use in State hospitals. This is based on a basic stock card system and will eliminate many of the problems associated with drug ordering and supply.

A major project which was completed in late 1976 was the updating of the Queensland Hospitals Standard Drug List. This involved a great deal of preparation and revision. About 2 000 copies of the 1977 edition were circulated throughout the State hospital system early in the year.

OFFICIAL COMMITTEES, BOARDS, CONFERENCES ETC.

The Adviser in Pharmacy serves on the following Committees and Boards:—

- Brisbane Hospitals Drug Advisory Committee;
- Advisory Committee on Hospital Drugs and Surgical Appliances;
- Pharmacy Board of Queensland;
- Poisons Discussion Group.

Meetings of these bodies took place regularly throughout the year.

The Adviser in Pharmacy is a Departmental representative on the National Therapeutic Goods Committee which meets in Canberra twice yearly.

Late in 1976, the Honourable the Minister established a Pharmacy Advisory Committee and appointed the Adviser in Pharmacy as Chairman. This Committee has met for preliminary discussions on matters pertaining to the practice of pharmacy in Queensland.

The Adviser in Pharmacy attended several local and interstate conferences and seminars during the year in his official capacity.

ABORIGINAL HEALTH

Health Officer (Aboriginal Health): I. A. MUSGRAVE, M.B., B.S.(Qld.), D.T.M.& H.(Syd.).

Regional Medical Officers:

Southern—J. L. JAMIESON, M.B., B.S.(Qld.), D.T.M.& H.(Syd.), M.P.H.(Michigan), F.A.C.M.A.

Central—R. B. HAWES, M.B., B.S.(Lond.), D.T.M.& H.(Liv.).

Northern—

R. A. SLOANE, M.B., B.S.(Hon.), M.R.C.P.(Lond.) (30-6-76—14-1-77).

R. P. DAVIDSON, M.B., B.S.(Qld.), D.T.M.& H.(Lond.).

The original purpose of the Aboriginal Health Programme, which was approved by the Commonwealth and State Governments some 5 years ago and which form a part of the health and medical services of the State Health Department, was to improve the health of Aborigines and to seek to raise it to a level equal to that of the rest of the community. This objective remains unchanged. A second major objective exists which is the introduction to and the promotion of greater utilization of all types of health services already available within the communities, by Aborigines.

The Aboriginal Health Programme is seen as a campaign of limited duration which will cease to operate when the health status of Aborigines is equivalent to that of the community generally and when all barriers to the use of health services generally, whether real or apparent, have been eliminated. The Programme is certainly not designed to create a situation where one service is provided for Aborigines and another for the rest of the community but rather, it aims to provide special assistance where it is needed, through close and continuous contact, but for a limited term. In addition, in urban areas where some Aboriginal families still have a sense of isolation from the community and also in low density and rural areas where an aggregation of highly qualified medical, nursing and paramedical staff and facilities cannot be provided because of extraordinary costs, the Aboriginal Health Programme has engaged in bringing the benefits of these services to these people and facilitating referrals and related procedures. In this way, the Aboriginal Health Programme is in the forefront of the development of rural health services in this State.

A concerted attack has been mounted upon a number of prevalent conditions including various complications of pregnancy and child birth, affecting both mother and infant, complications in the neonate, infantile and childhood malnutrition, anaemia, a variety of serious viral, bacterial and fungal infectious diseases affecting the upper respiratory tract and ears, the lower respiratory tract, the eyes, the bowel, skin, kidneys, urinary and genital tracts and heart, also a variety of intestinal and skin parasites, and a variable lack of knowledge considered to be essential to good health among many, who, for one reason or another, have had difficulty in adapting to a European structured society. In addition, in conjunction with other programmes or divisions of the Health Department, planning is well under way to tackle problems including abuse of alcohol, venereal diseases and emotional or nervous disorders, much of which are seen in a social as well as a medical context.

Approaches to improvement of health of Aborigines and introduction of preventive medicine services are somewhat complicated by the fact that Aborigines living in Queensland are not a homogenous group and vary greatly in their attitudes, adherence to tribal or European ways, economic circumstances, levels of education and particular health needs. Special training, skills and experience are needed in all professional health workers operating in this field, not the least important faculty being the ability of these to learn and grow in knowledge and judgement in the course of their work. It is not enough for professional persons to be expert in their own health or related field but they need also a wide epidemiological knowledge including a deep awareness of the social and cultural milieu of various Aborigines in the many towns and rural areas in which they live in this State. Health workers in the Aboriginal Health Programme receive training in and strive to improve their empathy with the Aboriginal population and seek to broaden their knowledge of the epidemiology relating to conditions which affect Aborigines. They have special abilities in attracting patients to the use of appropriate services and, in some circumstances, will deliver such services on behalf of the organization involved. The health workers of the Aboriginal Health Programme have developed an ability to communicate with a large proportion of the Aboriginal population, and are skilled at improving their awareness of the nature of health problems, the causes and effects, the need for investigation or treatment where necessary and for follow-up checks, the need for prevention and how to alter life-styles so that prevention can be achieved. The

education process is far from easy and relies very much on the development of awareness and evoking changes in attitude and behaviour as a matter of free choice by a better informed Aboriginal public.

Preventive medicine and health improvement have been areas which traditionally lacked appeal to medical and nursing graduates who have been trained, usually in hospital and clinical settings. Attitudes within these professions are changing gradually. This is considered to have been an important factor in reducing the rate of development of the Aboriginal Health Programme for two reasons, viz.: There has been a relative scarcity of suitable applicants for medical and nursing positions, and, because of the relatively smaller emphasis placed upon preventive medicine and health in the training courses for medical and nursing undergraduates and the predominant attraction in most instances of work in clinical areas, special training courses have been required for the doctors and nurses involved in the Aboriginal Health Programme. The extra skills sought have been acquired either through extra post-graduate qualifications or special in-service training courses designed to develop special skills, particularly among public health nurses, in the principles and practice of preventive medicine and communication with the public and particularly in regard to removing barriers which derive from social and cultural differences.

Difficulties in providing accommodation in many remote Aboriginal Communities and country towns, have caused delays which have also inhibited the growth of this programme. The need to obtain funds, attract satisfactory tenders, cope with problems of distance and supply, particularly with prolonged wet seasons in the north, have all had their effect on the timetable for this programme but these aspects are gradually being overcome.

It will be noted that half of the field staff are of Aboriginal ancestry, this being a basic requirement for health assistants and health workers (Table CXVI). A number of other field staff in the nursing and field officer classifications, are also Aborigines who have the appropriate technical qualifications. Health assistants and health workers receive an in-service training course and attend annual workshops, wherever their domestic circumstances permit, in order to upgrade their knowledge of health and health practices as well as to receive training in the art of communicating these concepts to their own people. They work in a supervised programme structure and are essential members of health teams. The combined skills and talents of the specially trained nursing staff and health assistants/health worker categories, from the basis of the success being achieved by the Aboriginal Health Programme. Increasing numbers of reports are being received from places not yet served by the Aboriginal Health Programme, indicating the desire of the local Aboriginal population for the programme to commence its activities in their areas. There have been many isolated reports from Aborigines expressing confidence and pleasure in appreciation of the work of this programme.

The Aboriginal Health Programme has now made contact with an estimated population of 36 600 Aborigines and Islanders within the State and is in regular contact with about 33 500 even though it is not operating at more than half of its planned strength and potential. Approximately 17 000 children have been subject to one or more health screening examinations or other contact with a Health Team and selected children are being followed up by the Health Teams according to their assessed health needs. There are presently 20 health teams operating in various parts of the State, including eight of the fourteen mainland Aboriginal communities and missions. Some of the twelve health teams working in urban and rural areas are in process of extending their activities on a more permanent basis through the creation of sub-units comprising usually, a nursing sister and an Aboriginal health assistant. This has already happened at Mossman, Charters Towers and Cloncurry. Only uncertainties relating to future finance have limited further extensions to Innisfail and Maryborough. The home bases of the 20 existing health teams in the localities presently covered are shown in Table CXVII.

TABLE CXVI
ABORIGINAL HEALTH PROGRAMME STAFF
AS AT 30-6-77

HEAD OFFICE—					
Health Officer	..	..	..	..	1
Microbiologists	..	..	..	..	2
Dietitian	..	..	..	..	1
Administration/Clerical		..	..		13
					17
REGIONAL OFFICERS—					
Regional Medical Officers	..	..			3
Clerical	..	..	..	..	1
					4
FIELD STAFF—					
Public Health Nurses	..	..	..		26
Sisters (Aboriginal Health)	..	..			11
Health Assistants/Health Workers	..				58
Field Officers	..	..	..	..	19
Itinerant Hygiene Officers	..	..			2
					116
TOTAL	..	..	..	..	137

TABLE CXVII
PRESENT DISTRIBUTION OF HEALTH TEAMS OF THE ABORIGINAL HEALTH PROGRAMME

Health Team No.	Based at					Estimated Aboriginal Population in contact with each Team	Localities Served
2 and 3	Cairns	..	..	3 170	Cairns, Edmonton, Gorge Reserve, Koah, Kowrowa, Kuranda, Mantaka, Mossman, Oak Forest, Redlynch
6	Mareeba	..	..	1 165	Chillagoe, Georgetown, Herberton, Mareeba, Mount Garnet, Ravenshoe, Tolga
8	Cooktown	..	..	582	Bloomfield River Mission, Coen, Cooktown, Laura
18	Mount Isa	..	..	3 919	Boulia, Burketown, Camooweal, Cloncurry, Dajarra, Duchess, Mount Isa
24	Townsville	..	..	625	Ayr, Charters Towers, Homestead, Hughenden, Mingela, Pentland, Reid River, Stamford, Torrens Creek
27	Townsville	..	..	10 835	Cardwell, Cordelia, Halifax, Ingham, Kennedy, Macknade, Murray Upper, Townsville, Tully
30	Rockhampton	..	..	1 421	Mount Morgan, Rockhampton, Yeppoon
40	Cunnamulla	..	..	824	Charleville, Coongoola, Cunnamulla, Eulo, Quilpie, Thargomindah, Wyandra, Yowoh
42	Brisbane	..	..	2 128	Acacia Ridge, Beaudesert, Brisbane, Coopers Plains, Inala, OPAL Mount Gravatt, Stradbroke, Sunnybank
45	Murgon	..	..	929	Bundaberg, Eidsvold, Gayndah, Goomeri, Gympie, Jimna, Kingaroy, Maryborough/Hervey Bay, Monto, Mundubbera, Murgon, Nanango, Wondai
50	Ipswich	..	..	473	Beachmere, Bribie Island, Burpengary, Caboolture, Esk, Fernvale, Harlin, Ipswich, Tarampa, Vernon
51	Cherbourg	..	..	999	Cherbourg Aboriginal Community
53	Palm Island	..	..	1 409	Palm Island Aboriginal Community
54	Yarrabah	..	..	1 240	Bessie Point, Yarrabah Aboriginal Community
57	Lockhart River	..	..	350	Lockhart River Aboriginal Community
58	Bamaga	..	..	1 200	Bamaga, Cowal Creek, New Mapoon, Red Island Point, Umagico Aboriginal Communities
60	Aurukun	..	..	875	Aurukun Mission
62	Kowanyama	..	..	700	Kowanyama Aboriginal Community
63	Mornington Island	..		681	Mornington Island Mission
TOTAL					..	33 525	

Achievements are many and a detailed report cannot be provided in such a short space but in addition to having established a healthy rapport with the aboriginal population in most localities where they are working, the health teams have had notable impact in terms of increasing attendance at hospitals for illnesses, particularly at earlier stages, plus a growing awareness among some groups in the aboriginal community at least, that they do not suffer as much from infectious illnesses as previously. Measurable improvements in the prevalence of the number of diseases have occurred in a large number of places including reduction in the degree of wasting in many aboriginal children resulting from acute undernourishment (i.e. a correction of acute malnutrition), a marked reduction in prevalence of anaemia, a very marked reduction in the occurrence of most pathogenic worms, notably *Ascaris lumbricoides* and Hookworm and also to a lesser extent, of *Strongyloides stercoralis* and clinical cases of trichuriasis, also a noticeable reduction in the occurrence of epidemic gastro-enteritis and of more severe cases of this disorder and also a reduction in the prevalence of severe respiratory tract infections such as pneumonia and acute bronchitis.

Discharging ears have been very prevalent but are being dealt with effectively in the Aboriginal communities by the combined efforts of the Hearing Conservation and Treatment Programme Team and the Health Teams of the Aboriginal Health Programme. Support by medical officers of the Aboriginal Health Programme has been provided for the University Hearing Conservation and Treatment Programme Team and the necessary follow-up of cases has been carried out by staff of the Health Teams when hearing defects and hearing infections have been diagnosed. This project is having a notable impact on the severity of the ear discharge among aboriginal children and most cases now respond to treatment much more quickly than previously.

Bacterial skin infections, while remaining very prevalent, are being treated earlier and more effectively by the health teams. This is of special significance in regard to the control of beta-haemolytic streptococcal skin infections which in 1973, resulted in a high rate of complications including acute glomerulo-nephritis and acute rheumatic fever in some centres. Scabies, head lice and bacterial skin infections have been controlled now, in many localities.

The prevalence of traumatic injuries other than fractures, especially among adults, is rising in a number of aboriginal communities and there appears to be some correlation with excessive use of alcohol.

No significant outbreaks of epidemic diseases have been reported among Aborigines in this financial year. Immunization against influenza was carried out again in aboriginal communities and there appears to be some correlation with Itinerant Hygiene Officers are employed to correct sanitation faults in homes occupied by Aborigines and to assist in the

maintenance of water supplies, nightsoil removal and sewerage systems and other public amenities in aboriginal communities and missions. It is considered that correction of defects in these areas are essential and form a positive contribution to the prevention of disease.

A dietitian-nutritionist has continued to provide a service to Aborigines and is involved particularly in providing special in-service training to field staff in the field of nutrition education. The Aboriginal Health Programme provides certain dietary treatment in instances of assessed malnutrition and this has contributed to a reduction of the number of cases of severe wasting.

Malaria eradication in North Queensland and in the Torres Strait is maintained by the Aboriginal Health Programme. A minor outbreak involving three cases of *Plasmodium vivax* malaria occurred at Bamaga in January, 1977, and was subject to rapid epidemiological investigation and institution of control measures which prevented any further transmission. It is noted that a number of imported cases of *P. falciparum* malaria contracted in Papua New Guinea, which were resistant to treatment with chloroquine, have been notified in Queensland during 1976-77. The treatment of chloroquine-resistant *P. falciparum* malaria has been discussed in a recent article in the 18th June, 1977 issue by Black, R. H., *Med. J. Aust.*, 1977, 1:929-933 and cases contracted in countries where chloroquine-resistance is known to exist, now require a different approach to treatment which is discussed in this article.

Vital statistics covering 10 540 Aborigines living in 14 communities and missions are now available for the 5-year period 1972-76. The birth rate is increasing by 3.5 per cent per annum. The infant mortality rate has fallen from 79.5 in 1972-74 to 60.6 in 1975-76, a decrease of nearly a quarter (Table CXVIII). This is now half of that reported for the period 1962-66 by Jose *et al.* (Table CXVIII). The stillbirth rate over the period has decreased by a quarter and the neonatal death rate by about one-seventh. The overall reduction in perinatal mortality rate between 1972-74 and 1975-76 in aboriginal communities and missions was from 66 down to 52 (Table CXVIII).

The most frequent causes of death in aboriginal infants under one year of age were birth injury/difficult labour and immaturity in infants who died in the first week of life, and, diarrhoea/gastro-enteritis and pneumonia in the case of older infants (Table CXIX). Infant deaths from diarrhoea and gastro-enteritis in 1972-74 numbered eighteen and the frequency was reduced by half in 1975-76. Reference to Table CXIX will also indicate that the rate of infant deaths from pneumonia has remained unaltered. Deaths in the post-neonatal period (1-11 months) have been reduced from 44 (Rate 45 per 1 000 live births) in 1972-74 to 21 (Rate 31.0) in 1975-76. These comprised 65 deaths in the five years 1972-76 (Table CXX).

TABLE CXVIII
PERINATAL AND INFANT MORTALITY FOR 14 ABORIGINAL COMMUNITIES

—	Live Births	Still Births	Neonatal Deaths		Post Neonatal Deaths	Total Infant Deaths	
			Number	Perinatal Mortality Rate*		Number	Infant Mortality Rate†
1962–66‡ 11 Communities	1 474	Information not available				133	112
1972–74§ 14 Communities	981	33	34	66	44	78	79.5
1975–76 14 Communities	677	16	20	52	21	21	60.6

* Perinatal Mortality Rate: Number of Stillbirths plus neonatal deaths per 1 000 births, live and still.
† Infant Mortality Rate: Number of deaths of live born infants prior to first birthday for 1 000 live births.
‡ Figures from Jose, D. G., Self, M. H. R., Stallman, *Aust. Paediatric Journal*, 1969, 5, 2, 71-88. Note: Jose *et al.* obtained no figures for infant deaths from 2 of the 11 Aboriginal Communities.
§ No returns Aurukun 1972 or Cherbourg 1973.

N.B. Returns not available in 1974, notably from Aurukun resulted in an I.M.R. of 74 in the period 1972-74 for 13 Aboriginal Communities. As a result of later efforts to obtain these returns and subject to § above, figures for 1972-74 covering all 14 Aboriginal Communities are now available and of course the necessary adjustment in the number of births (now 981) and infant deaths (now 78 I.M.R. 79.5) has been made to include the extra population covered.

TABLE CXIX

NUMBER OF DEATHS OF ABORIGINAL INFANTS UNDER ONE YEAR OF AGE FOR FOUR SPECIFIED CONDITIONS, BY AGE FOR 14 ABORIGINAL COMMUNITIES FOR THE PERIODS 1972-74 AND 1975-76

Cause of Death	Period	Under 7 Days	7-27 Days	1-11 Months	Total under 1 Year		No. of deaths under 1 Year of age from all causes
					No.	% of total deaths under 1 Year	
Diarrhoea and Gastro-enteritis B4	1972-74	..	3	18	21	27	78
	1975-76	..	..	7	7	17	41
Pneumonia B32	1972-74	..	..	13	13	17	78
	1975-76	..	2	6	8	20	41
Birth Injury and Difficult Labour B43	1972-74	5	..	1	6	8	78
	1975-76	4	..	1	5	12	41
Immaturity Part of B44	1972-74	17	..	..	17	22	78
	1975-76	10	..	..	10	24	41

No data for Aurukun for 1972 nor for Cherbourg for 1973.
NOTE.—The above 4 causes were responsible for 87 or 73 per cent of all infant deaths.

TABLE CXX

NUMBER OF DEATHS OF ABORIGINAL CHILDREN UNDER ONE YEAR OF AGE BY CAUSE AND AGE AT DEATH IN 14 ABORIGINAL COMMUNITIES FOR THE PERIOD 1972-76

Cause of Death ICD B Classification	Age 7 Days	7-27 Days	1-11 Months	Total Deaths under One Year	
				No.	% of Total Deaths under 1 Year of Age
B3 Dysentery .. .. .	..	..	1	1	0.8
B4 Diarrhoea .. .. .	..	3	25	28	14
B18 Other Parasites .. .. .	..	..	1	1	0.8
B22 Nutritional Deficiency .. .. .	..	..	4	4	3
B30 C.V.A.	2	1	..	3	3
B32 Pneumonia .. .. .	..	1	20	21	18
B42 Congenital Defects	2	..	2	4	3
B43 Birth Injury	9	..	2	11	9
B44 Other Perinatal	31	1	..	32	27
B45 Symptoms	1	1	6	8	7
B46 Other Diseases	1	1	..	2	2
BE47 M.V.A. .. .. .	..	..	1	1	0.8
BE48 Other Accidents .. .. .	..	..	3	3	3
TOTAL	46	8	65	119	100

TABLE CXXI

TODDLER (1-4 YEARS) MORTALITY IN 14 QUEENSLAND ABORIGINAL COMMUNITIES AND MISSIONS—1972-76

Cause of Death	14 Aboriginal Communities*			Qld.† 1974
	1972-74	1975-76	Total 1972-76	
B4 Gastro-enteritis	1	3	4	11
B6 Tuberculosis	1	..	1	..
B18 Other Infective and Parasite	1	1	2	3
B24 Meningitis .. .. .	..	1	1	1
B32 Pneumonia	5	3	8	10
B45 Ill Defined Conditions	1	..	1	5
B46 Other Causes	2	1	3	9
BE48 } Accidents	4	1	5	73
BE50 }				
Total Deaths	15	10	25	112
Total Deaths per annum	5	5	5	112

Estimated Population 1-4 years: 1 475* (1976) 156 200† (1974)
Estimated Population all ages: 10 540* 1 993 000†

These notable improvements are attributed to the influence of health teams of the Aboriginal Health Programme in encouraging earlier attention for treatment of serious illnesses, to improvements in nutrition and to a greater awareness on the part of staff of hospitals of the early signs of serious complications arising from these infections and prompt attention to treatment. Two in-service training courses have been provided for nursing staff working in a number of aboriginal community hospitals. These courses are designed to provide greater awareness of the nature of the serious infections which affect Aborigines, particularly children, and the best methods of treatment.

The causes of all deaths in infants in Aboriginal communities in Queensland for the 5 years ending 1976, are shown in Table CXX. The causes of death in the 1-4 year old age group are shown in Table CXXI. The trend in the aboriginal toddler death rate (1-4 year-olds) has shown a five-fold improvement over the last decade when the rate for 1962-67 as reported by Jose and Welch (17.4 per 1 000 est. population in age group—Q.I.M.R.) is compared with the rate for 1972-76 (3.4—calculated from Table CXXI). Of the 25 aboriginal toddler deaths in the five years 1972-76, twelve were due to gastro-enteritis or pneumonia. Prevention of such deaths in future is a matter of major importance in guiding the activities of health workers in the Aboriginal Health Programme.

The causes of deaths in Aborigines residing in the 14 aboriginal communities and missions in the five years 1972-76 are shown in ranking order in Table CXXII. There were 578 deaths. These are further subdivided by age and sex in Table CXXIII and in Tables CXXIV (see page 116) and CXXV, the age and sex distribution of deaths in each aboriginal community and mission are shown for the two periods 1975-76 and 1972-74 respectively.

A slight change in the pattern of deaths among Aborigines in the 14 aboriginal communities and missions in Queensland is apparent when all deaths for the two periods 1972-74 and 1975-76 are compared. The total number of Aborigines dying has diminished by 8 per cent on an adjusted annual rate. This has resulted from a combination of proportionately fewer deaths in the age ranges, under 1 year, 4-14 years old 65 years and over, not having been matched by smaller increases in deaths between the ages of 16 and 54 years (Table CXXVI).

The morbidity in aboriginal communities in 1976, as assessed on the basis of a record of the first presentation each month for any given condition, is set out in Tables CXXVII to CXXX, showing the morbidity for all ages and is also subdivided into 3 age groups, 0-4 years, children aged 5-14 years and adults being those 15 years of age and above. The proportion of total cases as percentages, are also shown for the ten most prevalent conditions. As there were no returns for Yarrabah in 1976, the population represented by these morbidity figures is reduced to 9 461.

TABLE CXXII

CAUSES OF DEATH IN 14 ABORIGINAL COMMUNITIES FOR THE YEARS 1972-1976, RANKED IN DESCENDING ORDER

Rank	International Classification of Diseases B List	No. of Deaths	Per cent. of Total Deaths
1	B32 Pneumonia	78	13.5
2	B45 Ill Defined Conditions	75	13.0
3	B4 Diarrhoea and Gastro-enteritis ..	44	7.6
4	B30 Cerebrovascular Disease ..	41	7.1
6	B19 Malignant Neoplasms	40	6.9
6	B28 Ischaemic Heart Disease ..	40	6.9
6	B29 Other Heart Disease	40	6.9
8	B44 Other Perinatal Mortality ..	32	5.5
9	BE48 Other Accidents	29	5.0
10	B33 Bronchitis and Emphysema ..	24	4.2
11	B46 All Other Diseases	22	3.8
12	BE47 Motor Vehicle Accidents ..	18	3.1
13	BE50 Other Causes	16	2.8
14	E21 Diabetes Mellitis	15	2.6
15	B43 Birth Injury	12	2.1
16	B18 Other Infective and Parasitic ..	6	1.0
18	B27 Hypertensive Disease	5	0.9
18	B22 Nutritional Deficiency	5	0.9
18	B42 Congenital Anomalies	5	0.9
20	B26 Chronic Rheumatic Heart Disease	4	0.7
20	B38 Nephritis and Nephrosis ..	4	0.7
23	B5 & 6 Tuberculosis	3	0.5
23	B24 Meningitis	3	0.5
23	B31 Influenza	3	0.5
23	BE49 Suicide	3	0.5
27	B20 Neoplasms Benign and Un-specified	2	0.3
27	B25 Acute Rheumatic Fever ..	2	0.3
27	B41 Complications of Pregnancy ..	2	0.3
31	B11 Meningococcal Infection ..	1	0.2
31	B3 Dysentery	1	0.2
31	B34 Peptic Ulcer	1	0.2
31	B37 Cirrhosis of Liver	1	0.2
31	B40 Abortion	1	0.2
	TOTAL	578	100%

No returns for Aurukun 1972 or Cherbourg 1973.

TABLE CXXIII

NUMBER OF DEATHS DUE TO ALL CAUSES FOR ALL COMMUNITIES BY AGE AND SEX FOR YEARS 1975-1976

	Age not Stated		<1		1-4		5-14		15-49		50-64		> 64		All Ages			Population 1975
	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	Total	
Aurukun	1	2	..	..	..	..	3	..	..	1	5	1	9	3	12	768
Bamaga	2	3	1	1	..	..	3	2	6	1	3	4	15	11	26	1 425
Bloomfield River	1	..	..	..	..	..	1	..	..	..	..	..	2	..	2	195
Cherbourg	2	1	..	..	1	..	3	1	2	1	2	6	10	9	19	995
Doomadgee	5	1	2	..	1	..	6	3	..	1	..	1	14	6	20	806
Edward River	2	..	..	..	..	..	3	..	2	3	1	..	8	3	11	321
Hopevale	1	..	..	..	..	..	1	1	..	1	..	..	2	2	4	573
Kowanyama	1	..	..	..	..	..	..	1	1	1	1	2	4	5	7	12	762
Lockhart River	1	1	..	..	..	..	1	1	..	1	..	1	2	4	6	377
Mornington Island	1	1	..	..	..	..	1	..	2	1	..	1	4	3	7	681
Palm Island	1	4	3	2	2	..	..	6	6	9	4	9	5	31	20	51	1 409
Weipa South	1	2	..	..	..	..	1	4	3	1	3	2	8	9	17	654
Woorabinda	2	..	1	1	1	2	1	..	1	2	1	5	7	12	496
Yarrabah	1	2	1	1	..	..	..	5	1	3	1	4	2	15	6	21	1 079
TOTAL	2	1	23	17	6	4	3	1	37	21	28	18	31	28	130	90	220	10 540

TABLE CXXIV

NUMBER OF DEATHS FOR 14 ABORIGINAL COMMUNITIES BY CAUSE, AGE AND SEX FOR THE PERIOD 1972-1976*

Cause of Death		Age not Stated		< 1		1-4		5-14		15-49		50-64		> 64		All Ages		Total
		M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	
B3	Dysentery .. .. .	..	..	1	..	..	..	..	..	..	..	..	..	..	..	1	..	1
B4	Diarrhoea and Gastro-enteritis .. .. .	..	..	14	14	2	2	1	..	2	..	3	1	3	2	25	19	44
B5 and 6	Tuberculosis .. .. .	..	..	..	..	..	1	..	..	..	..	..	..	1	..	2	1	3
B11	Meningococcal Infection .. .. .	..	..	..	..	..	..	..	..	1	..	..	..	..	..	1	..	1
B18	Other Infective and Parasitic .. .. .	..	..	..	1	2	..	..	..	1	..	2	..	..	..	5	1	6
B19	Malignant Neoplasms .. .. .	..	..	..	..	..	..	1	..	5	3	5	12	10	4	21	19	40
B20	Neoplasms Benign and Un-specified .. .. .	..	..	..	..	..	..	..	..	..	..	..	1	..	1	..	2	2
B21	Diabetes Mellitis .. .. .	..	..	..	..	..	..	..	..	1	2	2	6	3	1	6	9	15
B22	Nutritional Deficiency .. .. .	..	..	3	1	..	..	..	..	..	..	..	1	..	..	3	2	5
B24	Meningitis .. .. .	..	..	..	..	1	..	1	1	..	..	..	..	..	..	2	1	3
B25	Active Rheumatic Fever .. .. .	..	..	..	..	..	..	..	..	1	1	..	..	..	..	1	1	2
B26	Chronic Rheumatic Heart Diseases .. .. .	..	..	..	..	..	..	..	..	1	1	1	..	1	..	3	1	4
B27	Hypertensive Disease .. .. .	..	..	..	..	..	..	..	..	1	..	3	1	..	..	4	1	5
B28	Ischaemic Heart Disease .. .. .	..	..	..	..	..	..	..	..	7	4	7	5	11	6	25	15	40
B29	Other Heart Disease .. .. .	..	..	..	..	..	..	1	..	6	3	7	4	10	9	24	16	40
B30	Cerebrovascular Disease .. .. .	..	..	2	1	..	..	..	..	4	4	8	7	9	6	23	18	41
B31	Influenza .. .. .	..	..	..	..	..	..	..	..	..	1	1	1	..	..	1	2	3
B32	Pneumonia	1	..	9	12	4	4	1	..	6	6	2	3	19	11	42	36	78
B33	Bronchitis and Emphysema .. .. .	..	..	..	..	..	..	..	..	2	1	3	3	10	5	15	9	24
B34	Peptic Ulcer .. .. .	..	..	..	..	..	..	..	..	..	..	1	..	..	..	1	..	1
B37	Cirrhosis of Liver .. .. .	..	..	..	..	..	..	..	..	..	..	..	..	1	..	1	..	1
B38	Nephritis and Nephrosis .. .. .	..	..	..	..	..	..	..	..	..	1	..	3	..	..	..	4	4
B40	Abortion .. .. .	..	..	..	..	..	..	..	..	..	1	..	..	..	..	..	1	1
B41	Complications of Pregnancy .. .. .	..	..	..	..	..	..	..	..	..	2	..	..	..	..	..	2	2
B42	Congenital Anomalies .. .. .	..	..	2	2	..	..	1	..	..	..	..	..	..	..	3	2	5
B43	Birth Injury .. .. .	..	..	8	4	..	..	..	..	..	..	..	..	..	..	8	4	12
B44	Other Perinatal Mortality .. .. .	..	..	18	14	..	..	..	..	..	..	..	..	..	..	18	14	32
B45	Ill Defined Conditions	2	2	3	4	1	..	1	..	11	8	3	2	21	17	40	35	75
B46	All Other Diseases .. .. .	..	..	2	..	3	..	..	..	4	8	2	..	2	1	13	9	22
BE47	Motor Vehicle Accidents .. .. .	..	..	1	..	..	..	2	1	9	1	3	1	..	..	15	3	18
BE48	Other Accidents	1	..	2	1	2	3	1	..	10	5	3	..	1	..	20	9	29
BE49	Suicide .. .. .	..	..	..	..	..	..	..	..	3	..	..	..	..	..	3	..	3
BE50	Other Causes .. .. .	..	..	..	..	..	..	1	8	6	..	..	..	1	..	9	7	16
TOTALS		4	2	65	54	14	11	9	4	83	58	57	51	103	63	335	243	578

* No returns for Aurukun for 1972 or Cherbourg for 1973.

TABLE CXXV

NUMBER OF DEATHS DUE TO ALL CAUSES FOR ALL COMMUNITIES BY AGE AND SEX FOR YEARS 1972-1974

	Age not Stated		< 1		1-4		5-14		15-49		50-64		> 64		All Ages			Population 1975
	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	Total	
Aurukun	3	3	1	..	1	..	2	4	1	2	3	3	11	12	23	768
Bamaga	4	4	1	..	..	1	1	5	7	4	5	3	18	17	35	1 425
Bloomfield River	1	..	..	..	..	..	..	2	2	..	3	1	6	3	9	195
Cherbourg	3	1	2	..	..	..	2	1	2	..	5	1	14	3	17	995
Doomadgee	5	4	1	..	1	..	4	1	2	1	11	..	24	6	30	805
Edward River	2	4	..	..	..	..	2	..	..	2	3	1	7	7	14	321
Hopevale	2	..	..	1	..	..	2	2	2	2	4	1	8	6	14	573
Kowanyama	1	1	1	..	..	1	1	3	1	2	5	3	9	10	19	762
Lockhart River	1	..	1	3	..	..	..	..	1	1	..	4	7	7	10	15	25	377
Mornington Island	3	1	1	1	1	..	..	2	2	2	2	2	9	8	17	681
Palm Island	1	..	10	8	..	4	1	..	15	7	1	6	15	7	43	32	75	1 409
Weipa South	1	..	2	3	2	1	3	1	8	5	13	654
Woorabinda	2	..	1	1	..	..	6	2	4	2	3	..	16	5	21	496
Yarrabah	1	5	7	..	..	1	1	10	4	3	5	3	6	22	24	46	1 079
TOTAL	2	1	42	36	8	7	6	3	46	37	29	33	72	36	205	153	358	10 540

No returns Aurukun, 1972—Cherbourg, 1973.

TABLE CXXVI
COMPARISON OF NUMBER OF DEATHS BY SEX AND AGE GROUPS FOR FOURTEEN ABORIGINAL COMMUNITIES FOR THE PERIODS 1972-74 AND 1975-76 WITH DEATHS FOR QUEENSLAND FOR THE YEAR 1974

	Age Not Stated		<1 year		1-4 years		5-14 years		15-49 years		50-64 years		65 and over		ALL AGES		Total
	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	
Queensland 1974																	
No. of Deaths ..	3	..	361	245	98	63	74	72	1 376	633	2 500	1 273	5 956	5 477	10 368	7 763	18 131
% of Total Deaths ..	0	..	2	1	0.5	0.4	0.4	0.4	8	3	14	7	33	30	57	43	
Sexes Combined % of Total Deaths ..		0	3			.9			11		21		63		100		
14 Aboriginal Communities 1972-1974																	
No. of Deaths ..	2	1	42	36	8	7	6	3	46	37	29	33	72	36	205	153	358
% of Total Deaths ..	0.6	0.3	12	10	2	2	2	0.8	13	10	8	9	20	10	57	43	
Sexes Combined % of Total Deaths ..		0.8	22			4	3		23		17		30		100		
1975-1976																	
No. of Deaths ..	2	1	23	18	6	4	3	1	37	21	28	18	31	27	130	90	220
% of Total Deaths ..	0.9	0.4	10	8	3	2	1	0.4	17	10	13	8	14	12	59	41	
Sexes Combined % of Total Deaths ..		1	19			5	2		26		21		26		100		
% variation in No. of Aboriginal Deaths in age groups between 1972-1974 and 1975-1976	+50%	+50%	-18%	-25%	-12.5%	-14%	-25%	-50%	+20%	-15%	+45%	-18%	-35%	+12.5%	-5%	-12%	
			-21%		Nil		-33%		+5%	+8%	+11%		-19%		-8%		

TABLE CXXVII

DISEASES RANKED IN ORDER OF IMPORTANCE AS ASSESSED BY THE AVERAGE MONTHLY NUMBER OF CASES TREATED FOR ALL AGES AT 13 ABORIGINAL COMMUNITIES AND MISSIONS IN 1976*

Rank	Disease	Average Monthly Number of Cases			% of Total Cases
		Inpatients	Outpatients	Total	
1	All Other Conditions Seen	69	986	1 055	21·7
2	U.R.T.I's including Influenza colds, Tonsillitis, Sinusitis, Pharyngitis, &c.	21	824	848	17·5
3	Bacterial Skin Infection, e.g. Impetigo, boils, Cellulitis, secondary infection of tinea or Scabies	15	688	700	14·4
4	Other Trauma	21	606	628	12·9
5	Discharging Ears	9	291	297	6·1
6	Acute diarrhoea including Gastro-enteritis and other acute enteric infections	41	232	273	5·6
7	Acute Chest Infections, including Pneumonia, Bronchitis, &c.	58	132	188	3·9
8	Discharging Eyes or Conjunctivitis	3	96	99	2·0
9	Primary Fungal Skin Infections	0·4	87	88	1·8
10	Scabies	5	65	71	1·5
11	Syphilis	0·2	50	50	..
12	Urinary Tract Infection	4	43	47	..
13	Anaemia	6	39	46	..
14	Gut Parasites requiring treatment	6	38	43	..
15	Chronic Chest Infections	9	31	41	..
16	Diabetes Mellitus	4	37	40	..
16	Oral Infections including "Thrush"	4	37	40	..
18	Mental, Nervous or Emotional	5	30	36	..
19	Pyrexias of Unknown Origin	8	25	33	..
20	Other Pyrexias (Cause Known)	4	25	28	..
21	Fractures	6	20	26	..
22	Overt Malnutrition—Any variety	12	12	25	..
23	Old Rheumatic Heart Disease	1	21	22	..
24	Measles	4	17	21	..
25	Epilepsy, Fits or Fainting	4	13	18	..
26	Gonorrhoea—Proven cases only	0·5	12	13	..
26	Chicken Pox	0·4	12	13	..
28	Non-V.D. Vaginal Discharge	0·5	12	12	..
29	Dehydration	8	3	11	..
30	Leprosy	2	8	10	..
32	Other Venereal Disease	0·1	4	4	..
32	Active Tuberculosis	0·5	4	4	..
32	Miscarriages—Threatened	2	1	4	..
35	Neoplasms	0·5	2	3	..
35	S/Ac., Latent or Chronic Nephritis	0·1	3	3	..
35	Scurvy	0·6	3	3	..
38	Mumps	0·2	2	2	..
38	Salpingitis or Pyosalpinx	1	1	2	..
38	Acute Rheumatic Fever	1	1	2	..
38	Miscarriages—Actual	1	0·3	2	..
41	Rubella (German Measles) . . . . .	..	1	1	..
41	Acute Nephritis	0·6	0·6	1	..
43	Tetanus	0·1	0·6	0·7	..
44	Hepatitis	0·5	0·1	0·6	..
44	Snake-bite	0·2	0·4	0·6	..
46	Meningitis	0·2	..	0·2	..
TOTAL MONTHLY AVERAGE		340	4 516	4 855	..

* No returns Yarrabah 1976.
Aurukun included in 13 Aboriginal Communities and Missions.
NOTE.—Digits larger than 1 are rounded off to nearest whole number.

TABLE CXXVIII

DISEASES RANKED IN ORDER OF IMPORTANCE AS ASSESSED BY THE AVERAGE MONTHLY NUMBER OF CASES TREATED FOR THE AGE GROUP 0-4 YEARS AT 13 ABORIGINAL COMMUNITIES AND MISSIONS IN 1976*

Rank	Disease	Average Monthly Number of Cases			% of Total Cases
		Inpatients	Outpatients	Total	
1	U.R.T.I's including Influenza, Colds, Tonsillitis, Sinusitis, Pharyngitis, &c.	11	278	287	22.0
2	Bacterial Skin Infections, e.g. Impetigo, boils, Cellulitis, secondary infection of tinea or Scabies	4	177	182	14.0
3	All Other Conditions Seen	10	156	163	12.5
4	Acute Diarrhoea including Gastro-enteritis and other acute enteric infections	34	112	148	11.4
5	Discharging Ears	8	126	130	10.0
6	Acute Chest Infections, including Pneumonia, Bronchitis, &c.	34	54	88	6.8
7	Other Trauma	3	60	64	4.9
8	Discharging Eyes or Conjunctivitis	1	34	34	2.6
9	Oral Infections including "Thrush"	4	19	23	1.8
10	Overt Malnutrition—Any variety	12	9	21	1.6
12	Anaemia	4	15	20	..
12	Gut Parasites requiring treatment	4	15	20	..
12	Scabies	4	18	20	..
14	Primary Fungal Skin Infections	0.1	18	18	..
15	Measles	4	12	16	..
16	Pyrexias of Unknown Origin	5	11	15	..
16	Other Pyrexias (Cause known)	3	12	15	..
18	Dehydration	7	2	11	..
19	Chronic Chest Infections	3	5	8	..
20	Chicken Pox	0.4	6	7	..
21	Epilepsy, Fits or Fainting	0.1	1	3	..
22	Fractures	0.4	2	2	..
22	Scurvy	0.5	1	2	..
24	Mumps	0.2	0.1	1	..
24	Urinary Tract Infection	0.3	1	1	..
26	Syphilis . . . . .	..	0.7	0.7	..
27	Diabetes Mellitis	0.2	0.3	0.5	..
28	Rubella (German Measles) . . . . .	..	0.4	0.4	..
28	Mental, Nervous or Emotional	0.2	0.2	0.4	..
30	Meningitis	0.2	..	0.2	..
30	Acute Nephritis . . . . .	..	0.2	0.2	..
32	Acute Rheumatic Fever . . . . .	..	0.1	0.1	..
32	S/Ac., Latent or Chronic Nephritis	0.1	..	0.1	..
TOTAL MONTHLY AVERAGE		158	1 146	1 302	..

* No returns Yarrabah 1976.

Aurukun included in 13 Aboriginal Communities and Missions.

NOTE.—Digits larger than 1 are rounded off to nearest whole number.

TABLE CXXIX

DISEASES RANKED IN ORDER OF IMPORTANCE AS ASSESSED BY THE AVERAGE MONTHLY NUMBER OF CASES TREATED FOR THE AGE GROUP 5-14 YEARS AT 13 ABORIGINAL COMMUNITIES AND MISSIONS IN 1976*

Rank	Disease	Average Monthly Number of Cases			% of Total Cases
		Inpatients	Outpatients	Total	
1	Bacterial Skin Infections, e.g. Impetigo, boils, Cellulitis, secondary infection of Tinea or Scabies	4	265	268	23.3
2	U.R.T.I.'s including Influenza, Colds, Tonsillitis, Sinusitis, Pharyngitis, &c.	3	191	195	17.0
3	All Other Conditions Seen	7	172	178	15.5
4	Other Trauma	4	154	161	14.0
5	Discharging Ears (<i>Otitis media</i> or <i>Externa</i>)	2	104	107	9.3
6	Acute Diarrhoea including Gastro-enteritis and other acute enteric infections	3	43	47	4.1
7	Scabies	1	30	32	2.8
8	Primary Fungal Skin Infections, e.g. Tinea, Monila	0.2	29	29	2.5
9	Acute Chest Infections, including Pneumonia, Bronchitis, &c.	7	20	28	2.4
10	Discharging Eyes or Conjunctivitis	1	18	19	1.7
11	Gut Parasites requiring treatment	1	13	14	..
12	Pyrexias of unknown origin	2	8	10	..
12	Anaemia	0.3	10	10	..
14	Other Pyrexias (Cause known)	0.2	7	8	..
15	Oral Infections including "Thrush"	0.4	5	6	..
17	Fractures	0.6	4	4	..
17	Epilepsy, Fits or Fainting	0.8	4	4	..
17	Chicken Pox .. .. .	..	3	4	..
17	Measles	0.5	4	4	..
21	Chronic Chest Infections	0.8	2	3	..
21	Old Rheumatic Heart Disease	0.1	3	3	..
21	Overt Malnutrition—Any variety	0.3	3	3	..
24	Urinary Tract Infection	0.3	2	2	..
24	Syphilis .. .. .	..	2	2	..
24	S/Ac., Latent or Chronic Nephritis .. .. .	..	2	2	..
26	Mental, Nervous or Emotional	0.1	1	1	..
27	Gonorrhoea—Proven cases only .. .. .	..	0.8	0.8	..
28	Mumps	0.1	0.6	0.7	..
29	Acute Rheumatic Fever	0.3	0.3	0.6	..
29	Dehydration	0.1	0.5	0.6	..
31	Acute Nephritis	0.2	0.2	0.4	..
32	Hepatitis	0.2	0.1	0.3	..
33	Neoplasms .. .. .	..	0.2	0.2	..
34	Rubella (German Measles) .. .. .	..	0.1	0.1	..
34	Non-V.D. Vaginal Discharge .. .. .	..	0.1	0.1	..
	TOTAL MONTHLY AVERAGE	41	1 102	1 148	..

* No returns Yarrabah 1976.
Aurukun included in 13 Aboriginal Communities and Missions.
NOTE.—Digits larger than 1 are rounded off to nearest whole number.

TABLE CXXX

DISEASES RANKED IN ORDER OF IMPORTANCE AS ASSESSED BY THE AVERAGE MONTHLY NUMBER OF CASES TREATED FOR THE AGE GROUP 15 YEARS AND OVER AT 13 ABORIGINAL COMMUNITIES AND MISSIONS IN 1976*

Rank	Disease	Average Monthly Number of Cases			% of Total Cases
		Inpatients	Outpatients	Total	
1	All Other Conditions Seen	53	656	712	30.3
2	Other Trauma	16	390	405	17.3
3	U.R.T.I's including Influenza, Colds, Tonsillitis, Sinusitis, Pharyngitis, &c.	8	356	367	15.6
4	Bacterial Skin Infections, e.g. Impetigo, Boils, Cellulitis, secondary infection of Tinea or Scabies	5	245	249	10.6
5	Acute Diarrhoea, including Gastro-enteritis and other acute enteric infections	3	77	78	3.3
6	Discharging Ears (<i>Otitia media</i> or <i>Externa</i>)	0.6	62	61	2.6
7	Syphilis	0.2	47	47	2.0
8	Discharging Eyes or Conjunctivitis	0.5	45	45	1.9
9	Urinary Tract Infection	3	37	41	1.7
9	Primary Fungal Skin Infections, e.g. Tinea, Monila	0.2	39	41	1.7
11	Diabetes Mellitus	3	36	40	..
12	Mental, Nervous or Emotional	5	30	34	..
13	Chronic Chest Infections	5	24	30	..
14	Acute Chest Infections, including Pneumonia, Bronchitis, &c.	7	20	28	..
15	Scabies	1	17	20	..
15	Fractures	4	15	20	..
17	Old Rheumatic Heart Disease	0.9	18	19	..
18	Anaemia	1	13	14	..
20	Gonorrhoea—Proven cases only	0.5	12	12	..
20	Oral Infections, including “Thrush”	0.3	12	12	..
20	Non-V.D. Vaginal Discharge	0.5	12	12	..
22	Epilepsy, Fits or Fainting	3	8	11	..
23	Leprosy	2	8	10	..
24	Gut Parasites requiring treatment	0.5	7	8	..
25	Other Pyrexias (Cause known)	0.8	6	6	..
26	Other Venereal Diseases	0.1	4	4	..
26	Miscarriages—Threatened	2	1	4	..
28	Active Tuberculosis	0.5	3	3	..
30	Salpingitis or Pyosalpinx	1	1	2	..
30	Miscarriages—Actual	1	0.3	2	..
30	Acute Rheumatic Fever	0.8	0.9	2	..
30	Neoplasms	0.5	2	2	..
33	Chicken Pox .. .. .	..	1	1	..
34	Overt Malnutrition—Any variety	0.1	0.8	0.9	..
35	Tetanus	0.1	0.6	0.7	..
35	S/Ac., Latent or Chronic Nephritis .. .. .	..	0.8	0.7	..
37	Snake-bite	0.1	0.4	0.5	..
39	Dehydration	0.3	0.2	0.4	..
39	Hepatitis	0.4	..	0.4	..
39	Acute Nephritis	0.4	0.2	0.4	..
41	Scurvy	0.1	0.2	0.3	..
42	Measles .. .. .	..	0.2	0.2	..
43	Mumps .. .. .	..	0.1	0.1	..
TOTAL MONTHLY AVERAGE		131	2 209	2 347	..

* No returns Yarrabah 1976. Aurukun included in 13 Aboriginal Communities and Missions.
NOTE.—Digits larger than 1 are rounded off to nearest whole number.

FLYING SURGEON SERVICE

Flying Surgeon: A. C. M. PAUL, M.B., B.S.(Qld), F.R.A.C.S.
Anaesthetist: J. D. CAVENAGH, M.B., B.S.(Qld).
Pilot: Captain R. KEANALLY.

This service which provides expert surgical assistance to people in a wide area of central and western Queensland experienced its busiest year in the eighteen years since its inception. This is reflected in the figures quoted below:

There were 67 209 miles flown during the financial year and the total mileage since the inception of the service is now 1 596 281.

During the financial year 991 operations were performed consisting of 437 major procedures and 554 minor ones.

TABLE CXXXI

Year	Miles	Total Patients	Operations	
			Routine	Emergencies
1970	94 259	1 444	706	64
1971	90 667	1 271	681	80
1972	83 111	1 590	735	84
1973	85 067	1 898	830	72
1974	84 669	1 783	831	82
1975	71 440	1 823	744	56
1976	66 454	1 977	200	63

The number of consultations this year was 2 052 and the service has now examined 27 370 patients since its inception.

Captain R. Keanally who has given such excellent service over the past four years is still the Flying Surgeon Pilot and hopefully will remain a little longer. The service has also been fortunate in retaining Dr John Cavenagh as Medical Officer (Anaesthetist).

The Service continues to provide an excellent surgical service to the people of western Queensland and expert advice and assistance to the other doctors in the area. It is greatly appreciated by both the people and the medical practitioners.

The improvement in rural health service continues with visits by specialist paediatricians and physicians to country areas and this year a specialist radiologist has also been visiting country areas to advise the Medical Superintendents. A further advance this year was the approval given for Medical Superintendents to undertake refresher courses at base hospitals and so far five Superintendents have availed themselves of this opportunity. In addition many Superintendents are attending short refresher courses arranged by the Family Medicine Programme.

LEGISLATION

HEALTH ACT

The Health Act was amended on the 17th December, 1976 and is now known as the *Health Act* 1937-1976.

The principle features of the amendment were:—

Section 130 amended to provide for increased penalties for trafficking in dangerous drugs and prohibited plants and extension of powers to detain, search, seize and arrest.

A new Division (ivC) gives the Director-General power to license and control the activities of pest control operators.

A proclamation declared 30th October, 1976, as the date of operation of Sections 3 and 25 of the *Health Act Amendment Act* 1975. These sections dissolved the Queensland Health Education Council. (The Division of Health Education has now been established.)

PHYSIOTHERAPISTS ACT AMENDMENT ACT 1976

The principle features were:—

Qualification for registration amended to provide greater scope to determine suitability for registration, recognition of overseas qualifications, appointment of a committee of assessors to determine medical fitness of a person to practice physiotherapy and increase of penalties to a realistic level.

NURSING ACT 1976 AND NURSING STUDIES ACT 1976

These Acts replace "*The Nurses Act of 1964*".

The *Nursing Act* 1976 provides for the reconstitution of the Nurses Board of Queensland as the Nurses Registration Board of Queensland. The new Board is responsible for the qualification and registration of nurses and enrolment of persons connected with the nursing profession and the regulation of the practice of nursing.

The *Nursing Studies Act* 1976 provides for a Board of Nursing Studies responsible for the training and education of nurses in Queensland. The Board will recommend accreditation of Schools of Nursing within Colleges of Advanced Education. The Board will specify minimum requirement for nurse education.

PHARMACY ACT 1976

Replaces the *Pharmacy Act* 1917-1972. The principles of the previous Act were retained.

MEDICAL ACT AND OTHER ACTS (ADMINISTRATION) ACT AMENDMENT ACT 1976 (No. 2)

Amendments made to recognise new Acts—*Pharmacy Act* 1976 and *Nursing Act* 1976 in regard to the respective Boards.

PSYCHOLOGIST ACT 1977

Received Royal Assent on 14th April, 1977, but not proclaimed before 30th June, 1977.

Provision made for the constitution of the Psychologists Board of Queensland, the registration of psychologists and the regulation of the practice of psychology.

MEDICAL ACT AND OTHER ACTS (ADMINISTRATION) ACT AMENDMENT ACT 1977

Received Royal Assent on 21st April, 1977 but not proclaimed before 30th June, 1977.

The amendment provides for legislation which applies to the seven existing Professional Boards to be extended to include the Psychologists Board of Queensland.

AMENDMENTS TO REGULATIONS

The *Camp Regulations, 1949* were amended to clarify the definition of a camp.

The *Food Hygiene Regulations of 1976* were amended to ensure they applied to freezers as well as refrigeration etc.

The *Poisons Regulations of 1973*. Because of the number of amendments these regulations were consolidated during the year.

The *Private Hospital Regulations, 1937* were amended to facilitate the establishment of medical and paramedical services in hospitals.

ACKNOWLEDGEMENTS

I have much pleasure in recording my gratitude to all members of the staff for their loyal service, support, and conscientious attention to duty.

Acknowledgement is also made to other Government Departments for their co-operation, particularly the Government Statistician and his officers who, as usual, have been of great assistance in preparing the vital statistics section of this report and have supplied other statistical details from time to time throughout the year.

Every assistance has been given by the President, Dr D. Watson and members of the Council of the Australian Medical Association, Queensland Branch, and I am indebted to them for the help they have given me.

I would also thank the members of the various expert committees who have given so freely of their time and advice.

I desire to acknowledge the co-operation I have received from the Medical Superintendents of the base hospitals and would particularly thank Dr P. F. Grant, Executive Director of Medical Services, North Brisbane Hospitals Board and Dr H. R. McGregor, Medical Superintendent, Royal Brisbane Hospital, Dr J. G. Golledge, Medical Superintendent, Princess Alexandra Hospital; and Dr K. P. Kennedy, Medical Superintendent, The Prince Charles Hospital, for the assistance they have given during the year.